AMERICAN GAS JOURNAL

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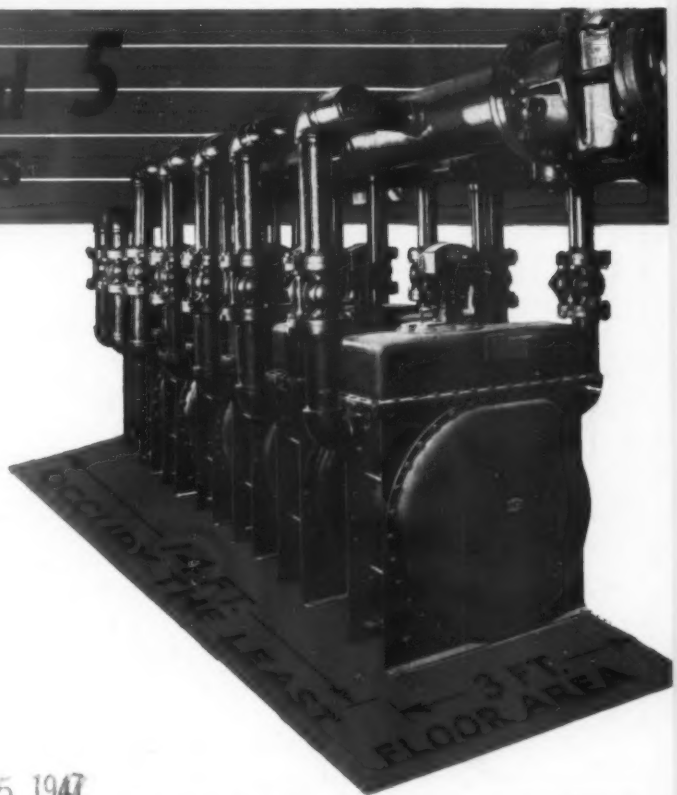

Here is a battery of seven No. 5 EMCO Pressed Steel Meters equipped with Emcorectors installed at a large housing project. Note that this entire manifold has been compacted into a very small floor area while full accessibility is provided for reading or on-the-spot servicing.

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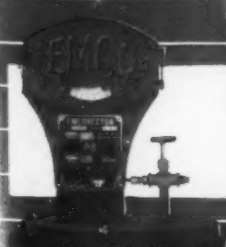

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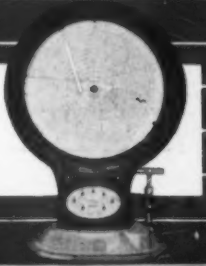
COMBINED RECORD GAUGE — A combination volume and pressure recording gauge for attachment to Emco high pressure meters. When calculated, the charts furnish an accurate reading of volume corrected to any contract base pressure. Made in both meter and clock driven types.



Can you title* this picture?

Humorous? Maybe—but with a serious note, too. One of the safest predictions anybody can make for the next few years is the end of the seller's market and the return of *Competition.* Which means selling instead of order-taking, customer-soliciting instead of priority lists—and something more: *Quality.* Americans will be again shopping —in the truest sense of the word—comparing value with value, brand with brand. Which adds up to a sound reason for recommending and selling Gordon Spreader-Flame conversion burners, made by the company which pioneered the gas conversion industry and still makes the most efficient, most dependable burners in the business.

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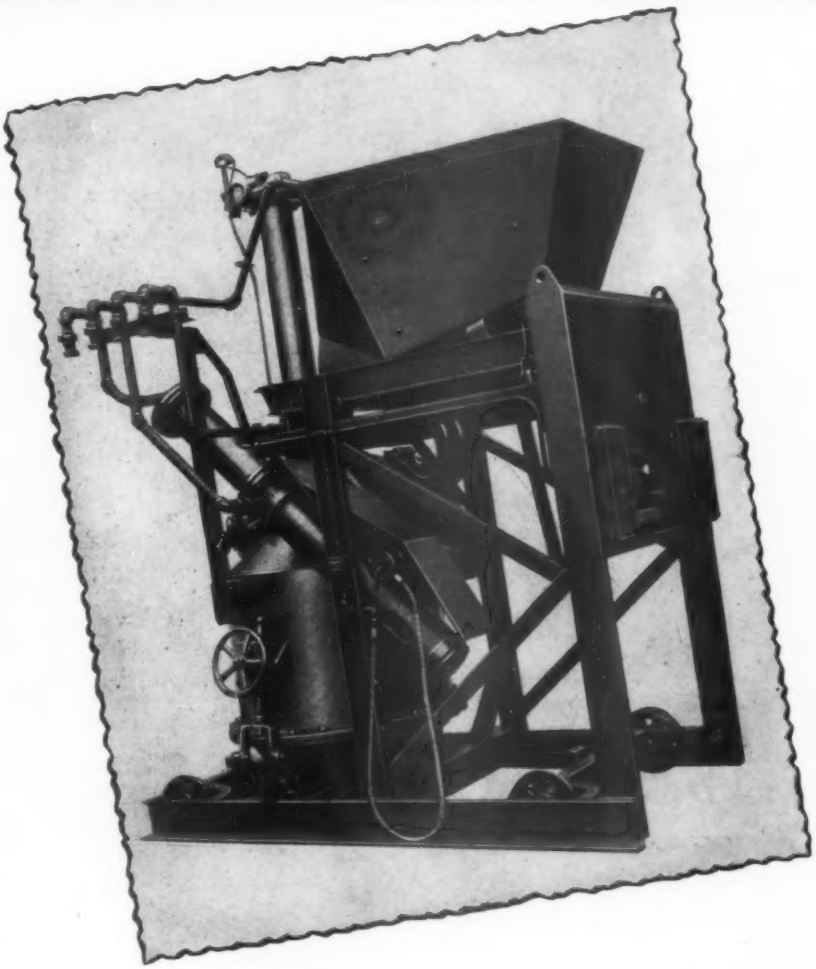
SEMET-SOLVAY CHARGING MACHINE



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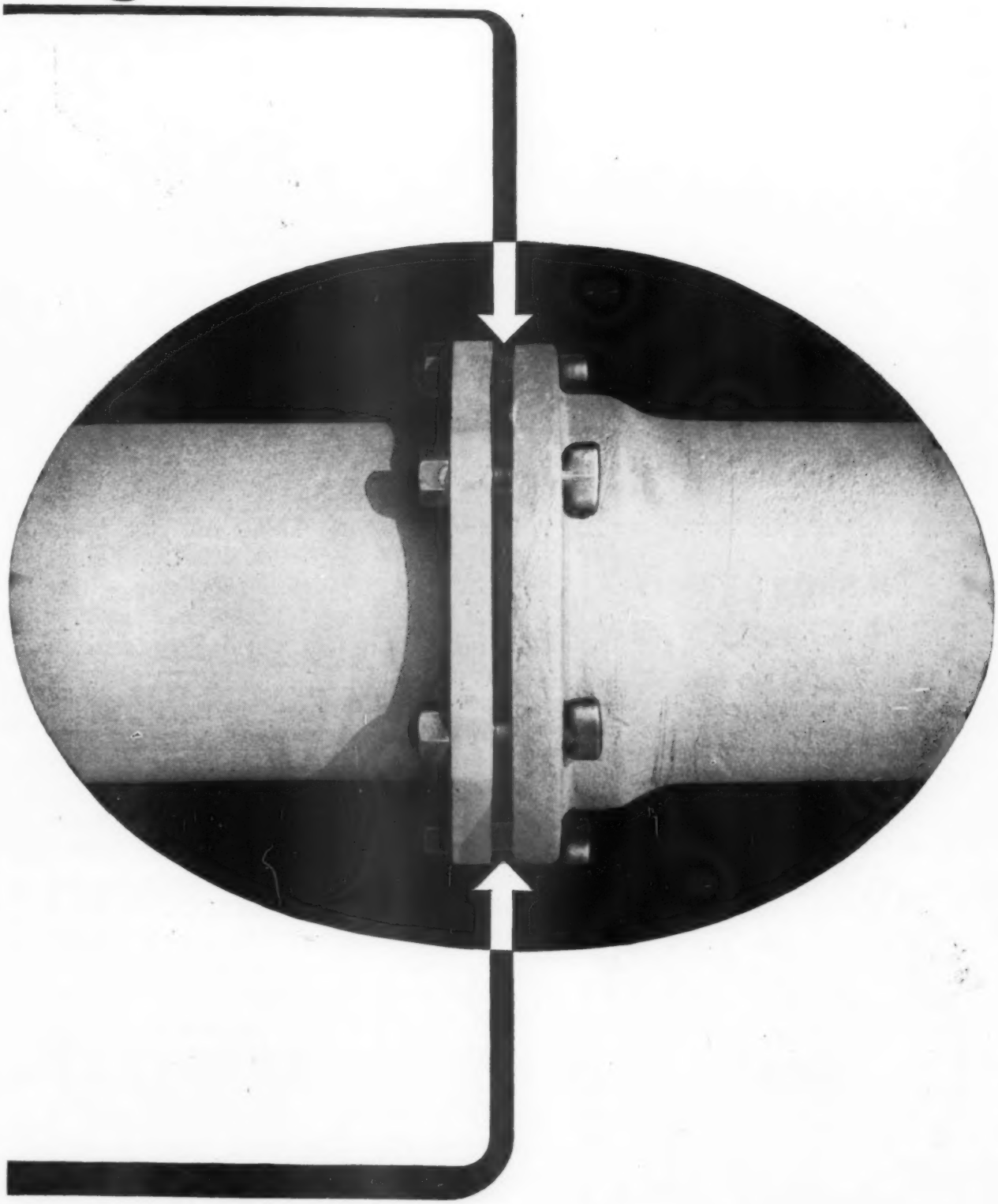

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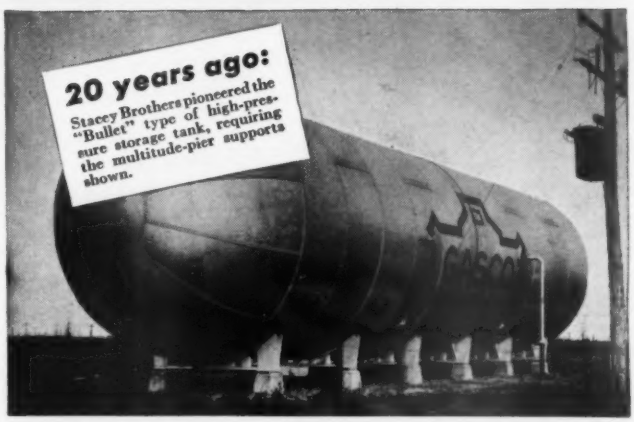
20 years ago:
Stacey Brothers pioneered the "Bullet" type of high-pressure storage tank, requiring the multitude-pier supports shown.

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- ***NO INCREASE IN COST***
- ***NO STRATIFICATION***
- ***LESS WEAR AND TEAR***

FEBRUARY
1947

AMERICAN
GAS JOURNAL

VOLUME 166
No. 2

Gas Production and Developments to Relieve Fuel Needs of France

Pipe Lines, Grid Extensions and Natural Gas Add to National Economy. Steam Generators Effect Power Savings

By
J. G. Coutant
Engineer
Barium Steel Corporation

THE HISTORY of the Gas Industry shows it has blazed the way beyond present horizons in periods of national indecision and at such times formulates new methods of progress, along which industrial civilization will follow.

It was a few years prior to 1820 when Louis XVIII of France provided funds for the gas lighting of the streets of Paris. This put an end to banditry and allowed safe assembly in the evening using flood lighting with gas jets.

After World War I, electric lighting superseded gas and made it unprofitable to operate the small village and city gas works, yet the grids and distribution systems of these populated centers remained. Gas again saw a new horizon made possible by the delivery of low cost gas to consumers that opened the way for the utilization of gas for domestic and industrial uses. Lower cost gas made it necessary to place gas generating plants at the source of fuel supply. The imported coal was utilized in gas works and coke-ovens adjacent to the coast, or point of entry, while the coal mine areas built coke-ovens and by-product plants within their zones. The long distance transportation of gas by pipeline was planned to connect the sources of fuel supply with the small gas distribution networks in populated areas.

This new progress, as in America, developed very rapidly. In Europe that practice quickly expanded from France, Belgium, Holland and Germany traveling east into Czechoslovakia where today a Government constructed line will supply Prague from a plant located at the coal mines at Most.

Governments use gas as a hedge against inflation, realizing that it is not the lack of fuel that causes industrial unrest but the means of delivering the energy to the consumer that is of greatest importance for national solidarity.

The new system being completed by the Government to supply Prague with gas at low cost, obtains its fuel source directly from the mines, a distance of more than 62 miles.

While electricity continues to furnish lighting and even heating, in places no longer profitable for gas utilization, gas blazes the trail to new vistas, where more commercial possibilities are to be seen. These are to be obtained by new methods of gasification, transportation, utilization and conservation for the generation of light, heat and power, and for air conditioning and refrigeration.

France now faces the difficult task of obtaining 75 million tons of coal per year and is purchasing coal from the U. S. at $23 per ton as against $12 a ton for coal mined in the Ruhr region while but limited quantities come from the Saar.

Recently, coal at the rate of but 1 million tons a month has been imported; 500,000 tons from the U. S. 250,000 from Ruhr, 100,000 from Poland and about 80,000 tons from Great Britain. Most of this coal will be consumed by railroads, ships and gas works at points adjacent to points of importation west of Paris.

The dire necessity for France to exercise economy in the direct use of coal is expected to lead to greater use of gas. Study shows that the output from the direct use of coal is very low, only 10 to 25 per cent., whereas the same quantity transformed into gas and coke would give a minimum of 75 per cent and up to 85 per cent of the calories obtained. In addition, important by-products would be available.

All French coal is not suitable for treatment, but out of the 27 million tons which could have been converted, only 12 millions were used, 8 million tons in coke plants and 4 million tons in gas plants. A very large extension of this activity is being planned for the future.

The sources of coal supply in France are shown in the adjoining map and the production from these areas is given in the adjoining table.

It will be seen that long distance transmission of manufactured gas by pipelines is beginning to fan out

from the several coal fields projecting the lines toward populated and industrial sections of the country, while vast areas remain undeveloped.

France has not had sufficient foreign exchange for the development of her fuel system in keeping with her national economy, but as in 1820, the Government with some private interests, will provide funds that will ultimately extend the gas industry far beyond what we see today.

Natural Gas

France has an active natural gas field in the southern region of St. Marcet that was discovered in 1939. The field has one oil well producing twenty barrels of petroleum a day, and five natural gas wells with a potential output of fifteen million cubic feet a day.

Immense natural gas reserves were found at a depth of 5,000 feet, at a pressure of about 2,332 pounds and 156°F. temperature. The gas leaves the well at 2,033 pounds per square inch.

The well casing is throttled by an arrangement to reduce the pressure to 427 pounds with a flow of eight million cubic feet a day.

A simple mechanical gasoline separator removes 2,400 to 3,000 gallons a day and the gas is piped to the Peyrouzet gas-works where butane gas and other products are extracted during the preparation of the gas for transport.

Zones A and B described in American Gas Journal, March 1945, all shaded zones are coal and lignite fields.

Coal and Lignite Fields of France

Groups of Basins Classification of the French Bureau of Mines	*Reference letter on Map*	*Departments in which these groups are located*	*Net Production in 1935 (in thousands of tons)* Coal	Lignite
Nord	A	Nord	9,880	
Pas de Calais	B	Pas de Calais	19,143	
Moselle	C	Moselle	5,646	
Loire	D	Loire	3,348	
Bourgogne	E	Saône et Loire	2,366	
Nivernais	E	Nièvre	286	
Bourbonnais	H	Puy-de-Dôme, Allier	495	
Auvergne	H	Haute-Loire, Cantal Puy-de-Dôme	655	
Gard et Hérault	F	Gard et Hérault	2,326	20
Tarn et Aveyron	G	Tarn et Aveyron	1,483	
Alpes	I	Isère, Savoie, Hautes Alpes	406	
Provence	J	Bouche-du-Rhône, Basses Alpes	0	726
Vosges	K	Haute-Saône	110	
Ouest	L	Vendée, Deux Sèvres	60	
Creuse	M	Creuse	12	
Gironde	N	Gironde	0	155
			46,216	901
		TOTAL:	47,117	

The natural gas has been piped from Peyrouzet where it enters a 6-inch line at 310 pounds pressure and arrives at Toulouse a distance of 47 miles at 42½ pounds pressure. Another pipeline has been extended to Saint Gaudens, Montrejeau, to Tarbes 53 miles from wells. Other pipelines to Saint Giron, Pamiers, Lourdes Soulon and Bordeaux are under construction.

The natural gas will also be consumed in a chemical plant at Soulon and in boilers and metallurgical furnaces at Toulouse and Bordeaux.

The composition of the gas at well outlet is:

Methane	89.46% by volume
Ethane	4.20
Propane	2.22
Butane	0.61

Calorific value 1,240-Btu. per cu. ft.

It was proposed more than a year ago to employ the gas pressure for the production of electricity and refrigeration in central station, also for the purpose of recovering the hydrocarbons such as ethane, propane, butane and hexane, etc.

The map shows gas companies and gas-works, also the tendency toward the concentration of gas production.

The life of France since 1820 has changed with the progress of the gas industry, and is expected to show marked evolution with the present rate of advancement.

In 1910 there were 841 gas companies.

In 1925 there were 713 gas companies with gas-works; five distributing pipelines connecting gas-plants in the vicinity; and 16 were distributing by pipeline low-cost coke-oven gas.

In 1943 there were only 567 gas-works; 57 interconnected gas-plants and 95 pipelines were supplied with coke-oven gas.

The inter-regional gas production and long-distance gas transport to populated and industrial areas is in a continuous state of development. The numerous coke-ovens of the north may soon deliver gas by pipeline to Paris, and other coal fields with coke-ovens will be connected to other towns and cities.

France may be expected to observe carefully the experiments at the coal mine in Belgium, where under government sponsorship, underground gasification of coal is being worked out.

It is thought that by underground gasification the many low-level, thin coal seams in French mines, and abandoned mines can be utilized eventually to produce a "simulated" natural gas.

The pipelines may be expected to begin at all sixteen coal and lignite fields, to transport gas under high pressure.

Gas pipelines having received government and private sponsorships are now being extended to Saint Giron, Pamiers, Lourdes Soulon and Bordeaux. The program will transport 17,700,000 cu. ft. per day.

E. D. Lynton, of the French government's Institut du Petrole has recently visited the United States seeking well drilling and other equipment, including personnel to augment the production of gas and oil from the fields of southern France. It is estimated that more than $10,000,000 worth of equipment is being purchased in the United States, and American drill crews contracted for.

During the war compressed natural gas was used to a limited extent in the south of France, for automobiles, and railcars operating between towns in the Pyrenees. These railcars with two 300-Hp Diesel engines driving a 40-ton car were converted to natural gas fuel instead of oil. The 300 Hp. Diesel engines developed 400 Hp. pulling three cars with a seating capacity for 400 passengers.

Steam Generators

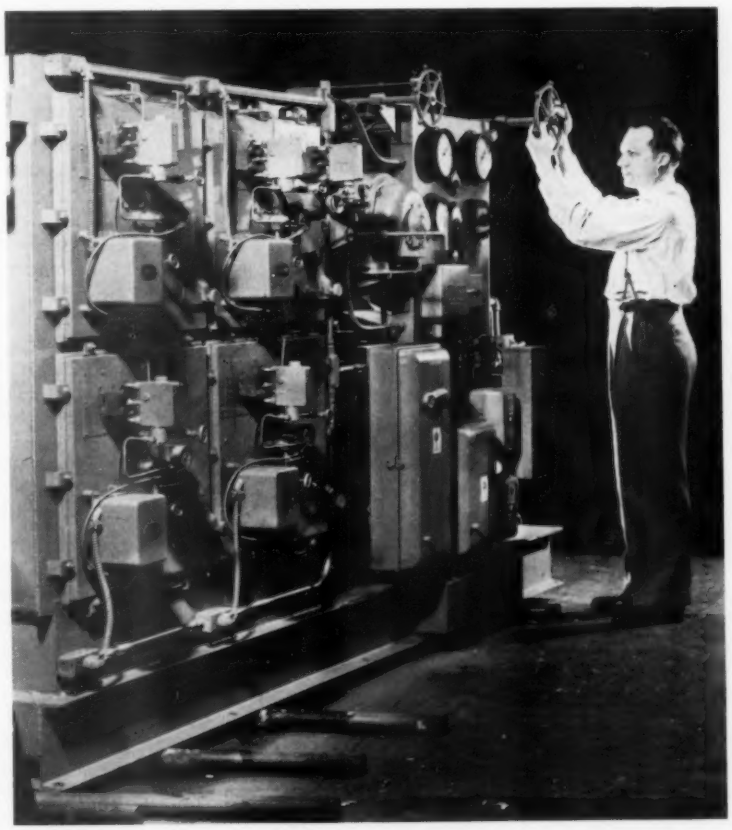
American industrialists burning gas, while well aware of the savings in fuel, time and money brought about in furnaces lined with light-weight firebrick, are now turning their attention to light-weight steam generators to effect like savings wherever high pressure steam is required. In recent years the Velox, Besler, and Clayton steam generators burning gaseous fuel at 500,000 to 1,500,000 Btu. per cubic foot of furnace per hour have effected corresponding reductions in the cost of operation for a given quantity of steam output. The ultra high velocity of gases outside and the supersonic speed of water inside the steam generating tubes has increased the heat absorption into the water at such a high rate that less metal surface is required. The steam generators weigh only one-tenth to one-thirtieth that of a conventional boiler for corresponding steam production, that is responsible for a 50 percent reduction in gas bills when working 10 hours a day or for intermittent service.

The successful operation of low heat-storage steam generators,* burning gas fuel under pressure is well recognized. They use high velocities on the gas side of tubes, while the water in the generating tubes attains velocities of supersonic speed. Such units are responsible for large reductions in weight, space, time of starting, and costs, with resultant fuel saving because of low heat capacity. They have been in service since 1935.

According to the prediction in 1931 of the late George A. Orrok; "Boilers of the future will be gas fired. The fuel will be brought into the station through a pipe and the products of combustion, largely carbonic acid and nitrogen, will go out of the chimney in a clean state. The atmosphere will not be polluted with dust and the coal pile on a windy day will not scat-

(Concluded on page 50)

* *See* AMERICAN GAS JOURNAL, *February, 1938, p. 23.—Ed.*



This Besler model has 3 saturated and 1 superheat sections, providing a capacity range of from 500 to 7,500 lbs. of steam per hour. Working pressure range is 300 to 1,500 p.s.i.; maximum temperature, 900° F. Can be gas or oil fired.

Prerequisites of a Training and Educational Program

By
Orie Van Rye
Personnel Administration Counsel,
New England Power Service Co.

THE American Management Association recently issued its annual report, "Management Appraises Its Job." Immediately after publication of the report, which carried assertions by thousands of industry leaders stressing aptitude in human relations as absolutely necessary to men of supervisory caliber, the Association was flooded by letters requesting innumerable extra copies of the report. The New York Times interviewed Mr. Dodd, Head of the A.M.A., and reported in part as follows:

"American business is taking concrete steps to insure that its management in all echelons from top executives to office and sales managers and plant foremen is thoroughly conversant with intelligent and enlightened human relations policies."

It is very apparent from this report that management has at last come to realize that it needs to spend as much time and energy developing the full potential of individual employees as it has in the past to utilization of technical knowledge machinery.

The famous Hawthorne Experiments of the Western Electric Company, the work done by the Yale Institute of Human Relations and others have furnished industry with a definite guide upon which to base a human relations program.

Roethlesberger in his book "Management and Morale" summarizes these as follows:

"Most of us want the satisfaction that comes from being accepted and recognized as people of worth by our friends and work associates. Money is only a small part of this social recognition. The way we are greeted by our boss, being asked to help a newcomer, being asked to keep an eye on a difficult operation, being given a job requiring special skill—all of these are acts of social recognition. They tell us how we stand in our work group. We all want tangible evidence of our social importance. We want to have a skill that is socially recognized as useful. We want the feeling of security that comes not so much from the amount of money we have in the bank as from being an accepted member of a group. A man whose job is without social function is like a man without a country; the activity to which he has to give the major portion of his life is robbed of all human meaning and significance."

The A.M.A. report referring to this same quotation adds the following.

"It is to the comprehension of such phenomena and their translation into company policy and action that the manager and supervisor must be trained, because these are the facts that go to the heart of the industrial relationship.

"Distinction in this area has hardly been considered a prerequisite to elevation to or within the management ranks. It has, indeed, scarcely been recognized as a factor at all, save perhaps vaguely as an element involved in various concepts of 'leadership.' We have cried out our sincere belief that *people* are the basis for the success of the business enterprise, that accomplishments can come only through people, that we must think everlastingly in terms of people—but we have selected our managers and supervisors almost exclusively on the basis of technical proficiency and knowledge.

"If we are to implement our beliefs, if we are to act in accordance with the truths that we see clearly, then in the selection of our managers and supervisors we must subordinate all else to the element of human understanding. We must pose as the first and decisive consideration the revelation by any candidate for managerial office of at least latent ability to comprehend human motivation and conduct in industrial society and to apply this knowledge to the continuingly effective utilization of people for achievement of the company's objectives."

"Human motivation and conduct in industrial society," "skill that is socially recognized as useful"—how can these phrases be transformed into tangible methods and policies? I sincerely wish I could say to you now—"We have found the answer and here it is." Instead, all I can say is that we have made a start and tell you how we are approaching the problem.

We first of all subjected ourselves to a critical self-appraisal in order to find the answer to the following:

1. What can we do to assure the supervisor of management support, to have him feel part of the management team and to bring to all branches of management an understanding of the basic fundamentals of human relations?

2. How can we fulfill the employee's desire for personal regard, recognition of his individual responsibility and significance of his job?

3. What can be done to select employees for jobs for which they have a natural inherent aptitude and thereby not only insure efficiency but avoid the maladjustment of the square peg in the round hole?

4. What should be done to bring to the employee a greater knowledge and a feeling of participation in his company's affairs? What can be substituted for the grapevine and rumor? What can be done to lick what has been termed company Enemy #1—"Misinformation"?

5. Where and in what form are induction and on-the-job training needed?

It was recognized that in all these problems, the supervisor is the key figure. He is the Company to the employee and any plant involving employee relations cannot succeed unless he is convinced of the need and furnished with the necessary "tools" to make the plan effective. Most important of all, the supervisor must feel that he is truly part of management, and you cannot make him feel that way just by telling him so.

The medium of Supervisors' Conferences was selected as being most effective to establish *two-way* communication between all branches of management, Administrative, Executive and Supervisory. The accent being all on the term *two-way*. It was necessary at the beginning of the conferences to devote most of the time on interpretation and discussion of existing policies and labor contracts, having in mind at all times that a foreman cannot convince others of the justice of a policy until he has been convinced himself. Thorough knowledge of the labor contract is one of the necessary tools of effective supervision.

Various conference methods are being tried in the different districts of the system. Some have full participation by all branches of management, others have the company manager present for the first fifteen minutes in order to tell them of any new developments, and the balance of the conference is conducted by a conference leader.

Perhaps the best illustration of how the Conferences have been functioning is to give you a report from one of the District's Conference Leaders to the Supervisors.

"The next series of meetings will be on the subject 'What does the employee expect of the supervisor.' The discussions will be directed at improving relations between all branches of management and particularly between supervisors and employees.

"It seems opportune at this time to point out that we have been holding Supervisory Group meetings for almost a year. During that time, we have tried to follow the objectives set for these meetings and a review of our progress indicates the following:

Aims

1. Improve relations (Management and Supervision)
- **(a) Knowledge of Company policy**
- **(b) Opportunity to suggest and criticise**
- **(c) Exchange of information**

2. Educate and train supervision

3. Discuss mutual problems

Development

Aim 1 Improve Relations
- **(a) Foundation established — What do Management and Supervision expect of each other?**
- **(b) Reconciled these viewpoints**
- **(c) Company policy clarified**
- **(d) Suggestions offered**

Aim 2 Education and Training
- **(a) Organization charts furnished**
- **(b) Department functions defined**
- **(c) Careful records of meetings published**
- **(d) Copies of Company policies furnished**
- **(e) Informative meetings**
  - **Labor Contract**
  - **Insurance**
  - **Safety**

Aim 3 Discussion Mutual Problems
- **(a) What do Supervisors expect of each other?**
- **(b) Improved inter-department relations."**

It will be of interest to you as an accounting group that one of the conferences under the heading of "Improved inter-department Relations" was designed to eliminate some of the cussing and blame that is directed toward accounting departments for the seemingly ever-increasing paper work that the foreman of today is required to do. The district treasury representative using a picture entitled "The House that Jack Built" very effectively demonstrates what happens to the Plant Account when time or material is not charged correctly.

So much time was charged to the roof drain that it sticks out away beyond the water barrel and empties the water on the ground.

Some of the material issued slips called for clapboards instead of shingles.

The code number for the second floor stairway was mixed up with the code for the roof.

Labor installing a window was charged to the chimney by mistake.

Almost as much labor was charged to the door knob as was charged to the door.

The conference resulted in a better and more sympathetic understanding of the problems of the accounting department.

Future conferences will be devoted to the Induction and Orientation of New Employees. Suggested methods and an Induction Check List will be discussed and adopted only after all participants have had an opportunity to suggest changes or additions. The induction of new employees will be used as an opportunity to tell our story, facts about the company, what the obligations of a Public Utility Company are and also to create a feeling of participation and belonging.

It is planned to use as an aid for more selective hiring Preemployment Testing. These tests will be given by men in each district who have received training in administering and interpreting, and most important of all, who will know the limitation of testing. It is our belief that testing together with close observation during the probation period can be an effective means to insure a high level of intelligence and an aid in guiding the employee toward the work for which he is most fitted. We have had already some experience in testing people in the Engineering and Accounting group of the Boston office with very successful results in that abilities and talents were discovered which were previously unknown and are now being utilized, resulting in a benefit to both the employee and the company.

Before starting preemployment testing, the basic principles and limitations of testing will be taught to the supervisors so that actual performance of the employee can be checked with tests' result. We do not expect to gain full benefits from testing until we have had at least three to five years' experience.

The answer to the question of how can the employee's desire for personal regard and recognition of his individual responsibility be fulfilled lies largely in the relationship between the supervisor and the employee. If the supervisor possesses the qualities of leadership, he can make members of his group feel the pride that comes with work well done through their individual effort. If the supervisor expresses the attitude "I do the thinking around here—You just do what you are told" he is taking away that inner-satisfaction that comes to all men from accomplishing or creating something through their own efforts.

We have started rating new employees by use of a simple rating form which requires, however, an analysis of actual performance, and, therefore, forces close observation by the supervisor of the employee's work and other qualities he may demonstrate. We hope that after a process of training and experience with probationary employees that we can develop a plan of recording employees' progress designed principally to help the employee progress. This, however, is a long-range program which will not be started until we are convinced that through this experience and training we can obtain impersonal and fair ratings based entirely on actual performance.

With the exception of Linemen we have in the past done very little training. Again, we intend to use the Supervisors' Conferences to aid in determining where and what training is actually required and how this training should be done.

At your last Managers' Meeting of the N. E. Gas Association, you had a panel of Labor Experts wrestling with the problem of promotions on a seniority basis. Mr. Healy, a member of the panel at that time, stated—I am not quoting verbatim, but he said in effect—"Seniority is a definite, undebatable quantity, measured in years, days and hours. A man's qualification too often is based on another man's opinion, which may be a prejudiced opinion. Industry cannot expect to accomplish anything until they have fulfilled their obligations of adequate training and have established means to measure progress and qualifications which are not subject to suspicions of discrimination." It is our belief that we can reach that objective.

We have given much thought to methods with which management may get its message across to employees.

Every month We're talking

WITH ADS LIKE THESE

FAMOUS FOR SILE

BIG FROZEN FOOD LOCKER

tenants and owners even more

For years a big favorite because of its silent, dependable operation, the famous Servel Gas Refrigerator now gives tenants and owners a wealth of new convenience. The new 1947 Servel contains a big

proved that the Gas Refrigerator is ideal for rental properties. Owners have found that Servel performs faithfully year after year. Operating costs remain low. Service upkeep is held to a minimum. These important advantages are the result of Servel's amazingly simple, basically different method of operation.

Famous Silent Refrigerator now offers more convenience . . . more value

1947 Servel Gas Refrigerator brings tenants and owners great new features, plus silence and dependability

Yes, the great new 1947 Servel Gas Refrigerator is even finer than the Servels that have already won the praises of more than 2,000,000 families. The 1947 Servel contains a big Frozen Food Locker that stores up to 60 packages of frozen foods. This famous refrigerator offers moist cold and dry cold for garden vegetables and meats. A specially designed flexible interior provides extra roominess. Plastic Coated shelves are rust- and scratch-resistant. All these new conveniences—plus Servel's permanent silence—are the reasons tenants will say, "There's nothing to match the 1947 Servel!"

job year in and year out, but its low operating cost remains low for the life of the refrigerator. That's because the freezing system of the 1947 Servel, like that of every previous Gas Refrigerator, has no moving parts to wear or break down.

These exclusive advantages—new, convenient features, plus famous silence and dependability—explain why you're sure to please tenants and owners when you specify the 1947 Servel for the new apartment buildings and homes

BIG FROZEN FOOD LOCKER

Business and professional men welcome this "new quality of living"

Servel All-Year Gas Air Conditioning
ideal for stores, offices, clinics, etc.

Here are just a few of the money-making advantages you give your clients when you specify Servel *All-Year* Gas Air Conditioning for their stores, offices, laboratories and other commercial uses.

More efficient working conditions! Increased store traffic. Less "sick time" lost from work! Better employee relations!

Low-cost comfort *the year round!*

This "new quality of living" increases home values

Comfort is greater, resale price higher with Servel All-Year Gas Air Conditioning

When you specify Servel *All-Year* Gas Air Conditioning, you make it possible for your client to select just the climate he wishes in his home the year round. With the touch of a fingertip he can enjoy cleaned, cooled, thoroughly dehumidified air—refreshing as a mountain breeze—all through the hottest, quietest summer weather.

And when winter comes, he can flood his home with clean, draft-free, properly humidified warmth—without leaving his living room! Winter, summer, spring or fall, a simple fingertip adjustment of the Selectrol control is all that's required to produce the desired temperature and humidity level.

In providing home owners with this simple, efficient, and complete control of their indoor climate, you not only give them a wonderful "new quality of living," but you increase the investment value of their homes. Leading mortgage loan officers all over the country agree that no matter what other new developments in homebuilding are perfected during the next ten or twenty years, homes equipped with the Servel unit will still be up to-date. And consequently will command a higher resale price over a longer period of time.

For further information on the year-round comfort and investment values of the Servel *All-Year* Gas Air Conditioner, get in touch with your local Gas Company. Or write direct to

to Architects and Builders

Today with millions of homes being planned, built or remodeled, you have a greater opportunity than ever before to promote Gas Refrigeration and *All-Year* Gas Air Conditioning. To help you take advantage of this tremendously expanding market, we're telling architects and builders about Servel's great gas load-builders with two hard-hitting campaigns in their favorite professional magazines.

Month in, month out, ads on the great 1947 Servel Gas Refrigerator dramatize its unmatched advantages. They emphasize its famous silence and dependability, as well as the big Frozen Food Locker—features that appeal to both tenants and owners. Every ad also includes a simple explanation of why the Gas Refrigerator has no moving parts in its freezing system . . . why it stays silent, lasts longer.

A second campaign—on the Servel *All-Year* Gas Air Conditioner—highlights the "new quality of living" this unit affords not only for homes, but also for stores, offices and other commercial installations. These ads point out that this "new quality of living" helps keep homes modern longer and increases their resale value.

This consistent advertising to architects and builders is the first big step in winning major acceptance for the great new 1947 Servel Gas Refrigerator and the Servel *All-Year* Gas Air Conditioner. Follow through by calling on these important third parties in your community. Or send them special folders on both great products. For your supply, write today to Servel, Inc., Evansville 20, Ind.

Servel GAS REFRIGERATORS GAS AIR CONDITIONERS

We intend to prepare an Employees' Manual but this, of course, is only a limited means. Under our program, our supervisors will be better equipped to pass on information.

Mr. Martin Dodge at the recent A.M.A. Conference suggested the following:

Give the facts.—"Employees are interested in information, not propaganda or argument. Few people in this world ever really won an argument. Conviction is usually emotional, not mental. Argument only results in generating adverse emotions. Tell the facts. Time pronouncements to spike rumors. Let the employees in at the earliest possible moment on the company's future. Their security is at stake. Uncertainty and worry mean inefficiency."

After reading the text of this talk up to this point, I remembered that you are an accounting group. Ever ready with a sharp pencil and an array of bewildering figures to prove something wrong or something right depending on how you are feeling at the moment. I haven't mentioned any numbers, dollars or cents. I want to rectify that—so here goes.

An employee of long service, earning a dollar an hour, will during this service period receive an amount of money which when the cost of all gratuities such as insurance and pensions, etc., are added will be approximately $100,000. How much money, time and effort can we afford to spend to increase this employee's efficiency? How much of this can we charge to or deduct from the amount we spend in obtaining customers' good will and good public relations? How much should we spend on the education and training of the foreman who directs the efforts of ten men on which $1,000,000 will be spent during their period of service?

There is an old story about Whistler and Oscar Wilde at the time that both these gentlemen were at their peak of fame not only for their art as painter and writer but for their sharp wit. Each one was somewhat jealous of the other's accomplishment to say the right thing at the right time. On one occasion at a social gathering Whistler made a particularly brilliant remark, and Wilde said wistfully: "I wish I had said that" and Whistler replied "You will Oscar, you will."

I also wish to conclude with words not my own. Words that to me were particularly inspiring and that I wished might have been mine. They were inspiring to me as I hope they may be to you in that they were spoken by a man who had the responsibility of the labor negotiations for the Radio Industry. With Mr. Petrillo as an antagonist you will surely agree that he probably bore many scars of battle. Thus, this man should have been disillusioned, should have been cynical and voiced the thought that nothing matters except the money in the pay envelope. Instead, this man proposed that we stop devoting *all* our efforts to putting out the fires of discontent and search out and then remedy the causes which start those fires.

At the conclusion of his talk to the several thousand Industrial Relation men there assembled, he flung this challenge:

"When they began building the Cathedral of Seville many, many centuries ago, the Bishop of Seville wrote on a piece of parchment and put in the cornerstone of that great cathedral a little statement. He said: 'Let us build here a cathedral so magnificent that generations following after us will think us mad for ever having dared to dream of such a thing.'"

Is it too much to believe that we might dream a dream today of better industrial relations built upon

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COLUMBIA LITTLE GEM GAS BURNER

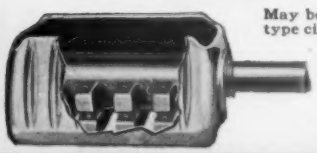
For Liquified Petroleum Gas

Immediate Delivery

Also Adaptable for Natural or Manufactured Gas

Just the burner for present day conversion. You can handle any job, domestic or commercial, with Little Gem. Easy to install. Minimum service required. Gives complete combustion without pre-mixing.

MULTIPLE UNIT BURNER



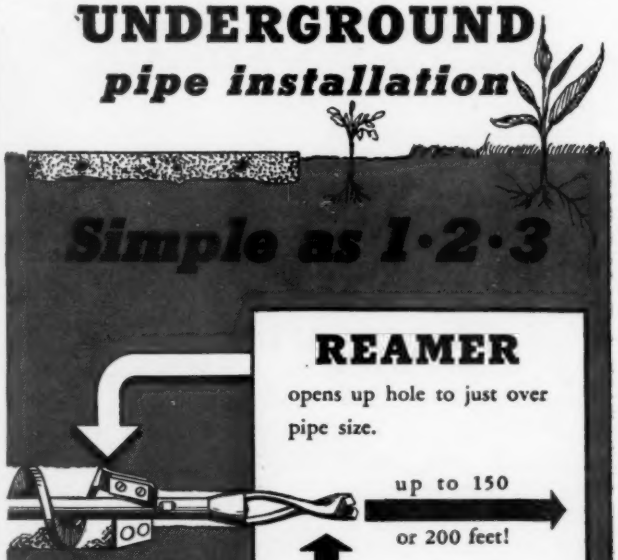
May be hooked up in series to fit any type circulating heater, steam tables, enameling ovens, galvanizing tanks and many other applications. Write for circular.

Send for free folder showing all types of Domestic and Commercial installations.

THE COLUMBIA BURNER CO.
729 Ewing Street · Toledo 7, Ohio

UNDERGROUND pipe installation

Simple as 1·2·3



REAMER
opens up hole to just over pipe size.

up to 150 or 200 feet!

PILOT BIT
opens up the hole and maintains straight boring.

90-pounds of air pressure and sufficient water to flush back cuttings is all that's needed to operate the HYDRAUGER.

HYDRAUGER

HYDRAUGER CORPORATION, LTD.
116 NEW MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA

As the Journal Sees It

THE American Gas Association and the Gas Appliance Manufacturers Association are using space in several popular magazines of large circulation, acquainting the public of the superior qualifications of gas ranges, water heaters, refrigerators and house heating and air conditioning.

Frequently in the same issue is an advertisement of a raw material manufacturer, selling his product both to the manufacturers of gas and electrical home appliances. However, in their advertising copy frequently an electrical appliance is illustrated with no mention of a gas appliance.

Recently an executive of a prominent gas utility company expressed his opinion on this omission in a letter to the United States Steel Corporation. We quote a part of his letter.

"A subsidiary of your good company, 'Gunnison Homes, Incorporated,' in a very fine folder, entitled 'Man's Greatest Gift to Women,' form #DFS-7, (April, 1946), shows pictures of an electrical refrigerator and water heater also an electric range. The copy in this folder forcefully advocates electricity.

"This, coupled with the fact that in a considerable number of United States Steel advertisements in various magazines, the majority showing electric equipment (recently the Saturday Evening Post, electric range), gives a gas man food for thought. My thoughts run like this:

"If the information I have is correct, the United States Steel Corporation also sells quite a quantity of steel for the construction of gas ranges, gas water heaters, gas refrigerators, gas furnaces and boilers as well as other fabricated articles in which gas is used—the thought—Why does U. S. Steel push electricity?

"From actual facts and figures, perhaps you know or do not know, in 1929 the gas industry had a little over fifteen and one-half million customers and in 1946 the customers total a little more than twenty and one-quarter millions. This is a gain in that period of over thirty per cent. In most areas where either manufactured or natural gas is obtainable, the preference for cooking with gas is upwards of ninety-eight per cent and, according to statistical information available to us, America's preferred cooking fuel is gas, twenty-two to one.

"In so far as my personal thoughts are concerned, there is no equal to a silent gas refrigerator or a fast recovery, economically operated automatic storage water heater.

"For your further information, during the first nine months of 1946 there were a little over 350,000 electric ranges constructed and slightly more than one and one-quarter million gas ranges. There is no question but that, where either fuel gas or L.P. gas is unobtainable, electricity while in most instances expensive, nevertheless is desirable for cooking, water heating and refrigeration. We also call to your attention that during the first nine months of 1946 there were 774,436 gas circulating and radiant type heaters manufactured. The manufacturers of gas circulating heaters and radiant heaters use steel in one form or another in their construction.

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"Would it be possible in the future for your advertising department and that of your subsidiary to give favorable expression to the use of gas equipment in all publications?

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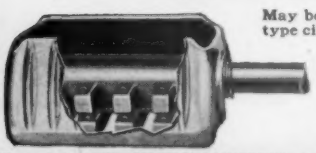

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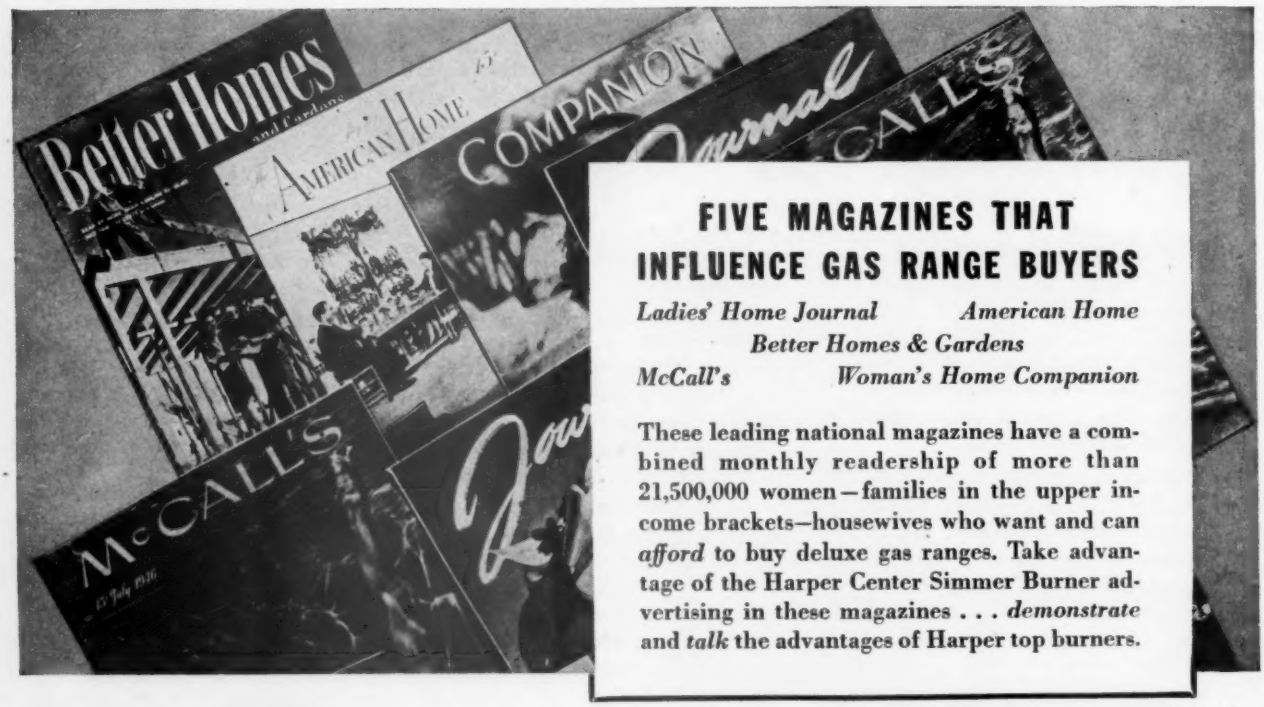
This booklet identifies ranges equipped with the HARPER CENTER SIMMER BURNER

A STOCK QUESTION being asked by more and more women when they set out to buy a new gas range is, "Has it got the Harper Center Simmer Burner?" That's the cue for your salesman to produce the booklet shown here, which is put in every Harper equipped range when it leaves the factory.

Our consumer advertising is telling prospective range buyers to look for this identifying booklet. It also points out that the famous Harper "2 burners in 1" Center Simmer Burner saves up to 39% on gas, keeps kitchens up to 9 degrees cooler, saves hours of kitchen pot-watching weekly, and has many other advantages possessed by no other top-burner.

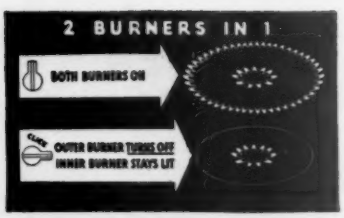
To trade-up your customers to a higher priced range, *demonstrate* these advantages. We offer you a special FREE booklet, "How to Sell More Gas Ranges," which contains a series of quick, convincing floor demonstrations planned to dramatize the advantages of the modern gas range. Send for copies for your salesmen. Harper-Wyman Company, 8561 Vincennes Avenue, Chicago 20, Ill.



FIVE MAGAZINES THAT INFLUENCE GAS RANGE BUYERS

Ladies' Home Journal *American Home*
Better Homes & Gardens
McCall's *Woman's Home Companion*

These leading national magazines have a combined monthly readership of more than 21,500,000 women—families in the upper income brackets—housewives who want and can *afford* to buy deluxe gas ranges. Take advantage of the Harper Center Simmer Burner advertising in these magazines . . . *demonstrate* and *talk* the advantages of Harper top burners.



The Harper Center Simmer Burner operates on the unique principle of "2 burners in 1"...a STARTING BURNER for frying and to start foods boiling, plus a small, economical COOKING BURNER, to maintain the cooking...both controlled by the same handle. It is subject to finer gradations of low heats—greater control and economy—than any other top burner made.

HARPER CENTER SIMMER BURNER

"...Holds the Lines for Gas"

HARPER
CENTER SIMMER

The Commercial Cooking Load

—Planning the Installation —Selling the Equipment

The commercial cooking load is important to every gas utility. First comes the cooking equipment and then its sale.

In a paper presented at the Annual meeting of the Southern Gas Association, L. J. Fretwell, Oklahoma Natural Gas Co., outlined some suggestions on commercial kitchen planning which follow.

A THOROUGHLY efficient commercial gas kitchen doesn't "just happen"—it is the product of much careful consideration of the individualized needs of the establishment being served. Each hotel, institution, or restaurant lay-out must be approached as a highly individual and specialized problem which can be solved only after determining the "food demand" requirements of the kitchen, selecting the specialized pieces of equipment that will fill the need, and then placing the battery selected in an arrangement that will be conducive to greatest efficiency, economy of time, and ease of operation.

Numerous engineers accept the practice of determining the equipment necessary by basing their calculations on the number of meals served and prices per meal. This does not take fully into consideration location or locales, eating habits and types of food available. How much simpler and more practical to approach the solution from the standpoint of the actual needs of your customer.

Too many times the kitchen engineer in making a suggestion for new equipment will make the mistake of measuring the space in order to determine how many sections of commercial ranges can be installed in that given space. This is absolutely incorrect! It is, of course, necessary to know the dimensions of the space where the equipment is to be installed, but this problem should be approached *after* one has determined the quantity of cooking equipment necessary.

The first consideration should be to determine the type of cooking, the quantity of roasting and baking, and the "top cooking" requirements. At first glance, this may seem a very difficult assignment, but if the kitchen engineer will spend a little time in discussing the specific cooking requirements with the head chef, this seemingly impossible task resolves itself into one of amazing simplicity. The chef may not know how many ovens he needs, but he does know the quantity and type of roasting and baking to be done and he can easily tell you the size and number of roasting or baking pans that would be necessary to do this quantity of roasting and baking. With a working knowledge of your commercial gas cooking equipment, you will then be able to determine how many roasting or baking ovens are necessary to do the job, and the first step in compiling the information you will need has been taken.

In similar manner, you can determine the amount and types of top cooking requirements. In this category one should perhaps first consider deep-fat frying and griddle use. You can determine from the chef the quantity and type of frying done. You will then be able to determine whether one or more fryers are needed as well as the size and type of fryer necessary.

A careful analysis of the grilling requirements will help you to determine the number, type, and size of the griddles to be selected. Here, it may be added, that some room for expansion in this section should be allowed. This type of food is appealing to the public appetite, and it has been found that with the right equipment properly used, the demand for this type of food will increase greatly.

Cooking top required for volume "stock pot" cooking, open burner quick-order cooking, broiling and toasting needs can all be fitted into your plan by correlating quantity and type of cooking demands with selection of specialized cooking equipment.

Thus, through careful analysis you have completed the initial step—that of selecting the correct amount and type of units to do the best job for that particular establishment.

Now your problem will be to fit your battery into the available space, and to do this in such a manner that the chefs and cooks may work with the greatest possible efficiency and ease.

Factors such as the convenient placing of stations for *functional cooking*, the proper elevation of all units, placement to avoid grease accumulation as much as possible and setting up the battery so that conditions are conducive to easy and thorough cleaning will show worth-while results in your completed plan. Conduciveness to easy and thorough cleaning cannot be over-emphasized. *Remember that gas itself is clean!* It is only the equipment that gets dirty!

Plan No. 1

Perhaps I can best illustrate the composite picture of the selection and placement of a battery of equipment by citing an actual case, one which shows that investigation must precede definite recommendations. This case involved a fairly large hotel where the manager was contacted in regard to new cooking equipment. Upon talking with the chef, I found that he was not only very familiar with various types and kinds of cooking equipment, but that he had actually made his own lay-out for equipment to fit his needs.

It appeared to be an excellent plan. He had selected units with regard to functional cooking. The two units at left are solid top sections designed to do the various types of stock pot cooking, and both are equipped with roasting ovens. This made an excellent arrangement in that the location is generally ideal for these two types of cooking. To the right of these two ranges, the chef had specified an open-top range with burners to take care of the various types of quick cooking. This unit was also equipped with an oven. Beside this was a fry-station, a fourteen inch deep-fat fryer, with a griddle-top range beside it equipped with an oven. As he had requirements for broiling in addition to his grilling, the chef had included a Salamander Broiler installed in place of the high shelf over the griddle-top range section.

The placing of the fry-station beside the "quick-cooking" station was in good judgment since the fry-cook

could at opportune times operate the quick-cook section.

Thus the chef appeared to have a good plan had we not considered it more fully, but experience dictated that the chef and I reconsider together his exact requirements and the "workability" of his plan when put into actual use.

As suggested before, the first thing we considered was the baking and roasting requirement. At this particular time, very little baking or pastry work was done by the hotel. Baking requirements were, therefore, eliminated from the battery since in the event of future need in this respect a suitable location for a baking oven could then be provided.

A careful analysis of the roasting requirements showed that two large ovens were needed and were used regularly, and that once in a while a third oven was required. The chef had provided four ovens thinking that inasmuch as the oven was part of the range anyway, it didn't make much difference if he had an extra oven. The answer to this, of course, is that a fourth oven represented needless expenditure.

In checking top-cooking requirements it was determined that a fryer the same as originally specified was needed, and that the griddle specified was adequate, but that the stock pot cooking requirements were not sufficient to justify two sections of solid-top ranges. It was, therefore, agreed to recommend one solid-top and one open-top section.

With this working knowledge and considering other factors of arrangement, the new equipment selected used a battery, now consisting of one solid-top range with oven, one open-top range with oven, one griddle-top range without oven, one deep-fat fryer, one spreader plate, and one ceramic broiler.

Exact requirements for top cooking and roasting are met in correct number and size of units for these purposes. The selection of a griddle top without oven for the third section gives the special advantage of a unit easily cleaned. The space below, formerly occupied by a grease-accumulating, unused oven, is now kept clean and will be found very handy for placing frying equipment.

Plan No. 2

The Salamander Broiler was eliminated and a separate broiler installed at the extreme right of the battery. The advantages are obvious. The over-head, medium-sized roasting oven wtih which the broiler in Plan No. 1 is equipped takes care of any extra roasting requirements. Its location is ideal for heating platters for sizzling steaks, and it can be used as well for "finish" roasting, such as for giving an appetizing brown "finish" to hams, au-gratin potatoes, and the like.

Between the griddle-top range and the broiler, a deep-fat fryer the same size as originally proposed was located, assuming its place in the fry station. A spreader plate was recommended in this position, as there is a great need for shelf space in a battery of ranges, particularly where there is a quantity of grilling and frying. If a spreader is not provided, cooks oftentimes use a part of the range battery for storage space—a most unsatisfactory habit, as grease from frying and grilling will eventually accumulate and it is difficult to remove.

When we finally arrived at computing the comparative costs of the equipment in the two plans, it was found that the list price of the equipment proposed in the chef's plan amounted to $1,363.00, while the list price of the final plan amounted to $1,231.00—a saving of $132.00.

Selling the Equipment

At this same meeting H. A. Jordan, Lone Star Gas Co., presented a paper on the "Protecting the Commercial Cooking Load" in which he makes pertinent suggestions on the sale of commercial cooking equipment as follows:

IF WE are to protect the Commercial Cooking Load and prevent the inroads of competition, we should set up a definite program with this objective in mind. In my opinion, this should be a four-point program:

1. Train and furnish your Commercial Cooking Representatives with information and selling tools to combat competitive fuels and equipment.
2. Begin an advertising program plugging Commercial Cooking Load.
3. Join your State and National Restaurant Association and take an active part in them.
4. Set up a continuous contact plan for complete coverage of all eating establishments.

Let's consider the first point, that of training and furnishing your Commercial Representatives with information and selling tools to combat competitive fuels and equipment:

We should know thoroughly the electric and gas rates in our respective localities. Your Commercial Representative should know how much energy or B.T.U.'s that 1c will purchase in electricity and gas at varying rates. We have a graph form used by our department to show this comparison and it is most effective.

In addition to knowing about rates, your representative should know as much as possible about the advantage and disadvantage of competitive equipment—what it will do and what it will not do.

In my opinion, we should all ask and demand of the manufacturers of gas commercial cooking equipment, to furnish us with better selling manuals — manuals which will give a cooking story instead of a "nut and bolt" story. For example, practically all catalogs today show a cut of a deep fat fryer, how the gas enters the tube, where and how the thermostat works, the weight of the fryer, and how much fat it holds. But there is not one single catalog which shows in picture form what kind of a cooking job the fryer will do. We believe pictures should be shown indicating that fish, potatoes, croquettes, etc., can be fried one after the other in the same fat without one food tasting of the other. When we first began telling this story, of frying several foods in the same fat, few restaurant operators would believe it, whereas if it were shown in pictures, this fact would be more readily accepted by the restaurant operators. This same idea applies to all other types of Commercial Cooking Equipment.

Point two was to begin an advertising program plugging Commercial Cooking Load.

By advertising through local papers or direct mail, we can show operators that good gas equipment really pays dividends. Operators are in the market for plenty of new equipment now. Many are thinking of enlarging or remodeling their establishments. In my opinion, our advertising should be directed toward calling to the attention of these operators that the first remodeling job to be done should be done in the kitchen rather than in the appearance of the front seating area. Basically, profits are made from the kitchen and not from the seating area.

The Commercial Cooking Load deserves, and must have, a portion of the promotional advertising dollar, not only to increase this load, but to

offset the anticipated sales messages of competitive fuel. Manufacturers of this competitive equipment will be out after this load with effective sales messages. If you have not already felt or experienced the effects of these messages, I do not believe you will have long to wait until you will.

We have suggested in point three to join your State and National Restaurant Associations and to take an active part in these associations.

We suggest this because most of the major establishments in your city belong to these organizations. They are progressive. They are informed on all major subjects by the National and State Associations. News travels fast throughout the membership, and this applies to good service and good results from good equipment as well as other problems. Let me explain what I mean by taking an active part in these Associations. Go out and solicit memberships for the Associations, sell banquet tickets for social functions, and help in securing attendance at local meetings. Your efforts will be repaid not only with appreciation, but with actual appliance sales. For example, last November our local restaurant organization put on a banquet and dinner dance—530 tickets were sold of which we sold 109 for them. However, along with these tickets we sold 28 individual Commercial Cooking Units within 60 days thereafter. Many of these units were sold during the actual ticket solicitation. Contacts of this nature are just additional reasons for making more calls.

Point four was to set up a continuous contact plan for complete coverage of all eating establishments.

For many years our company has adopted a continual contact program to be used by the Commercial Cooking Department. The purpose of this contact program is three-fold.

1. To make friends with our customers by helping them with our service and with suggestions for doing a better job.
2. To keep better informed about the conditions of the Commercial Cooking equipment in use.
3. To determine the inroads which competition might make.

We have continually surveyed all of the Commercial Cooking establishments in Dallas. These surveys and contacts established beyond any doubt that we were beginning to have aggressive competition from electric energy and it behooves us all to be thinking of ways to combat it.

I would like to tell you a little more about our contact plan. We have divided the eating establishments in Dallas into three classes:

Class 1—Includes thirty of the largest restaurants and hotels which we serve. This group is contacted every thirty days.

Class 2—Includes approximately 100 of the next largest establishments which are contacted on a 60 to 90 day basis.

Class 3—Consists of all other eating places including taverns and small lunch stands. This group is contacted at least once a year.

On our regular calls a survey form is filled out giving a complete record of the equipment in use in these establishments. When equipment is changed, the card is also changed. If service is needed, our Commercial Representative turns in the request for service to be executed by our Service Department. Our Company makes flame adjustments only, but some might wish to carry this service program further. The extent to which this service program should be taken, depends upon the number of capable service organizations within your city. If none exist, it would be well to give this matter considerable thought—for competition strikes at trouble giving appliances.

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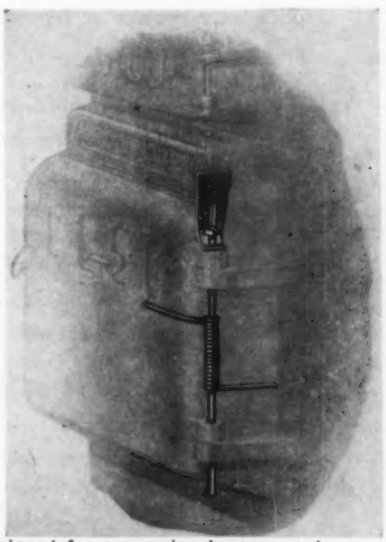

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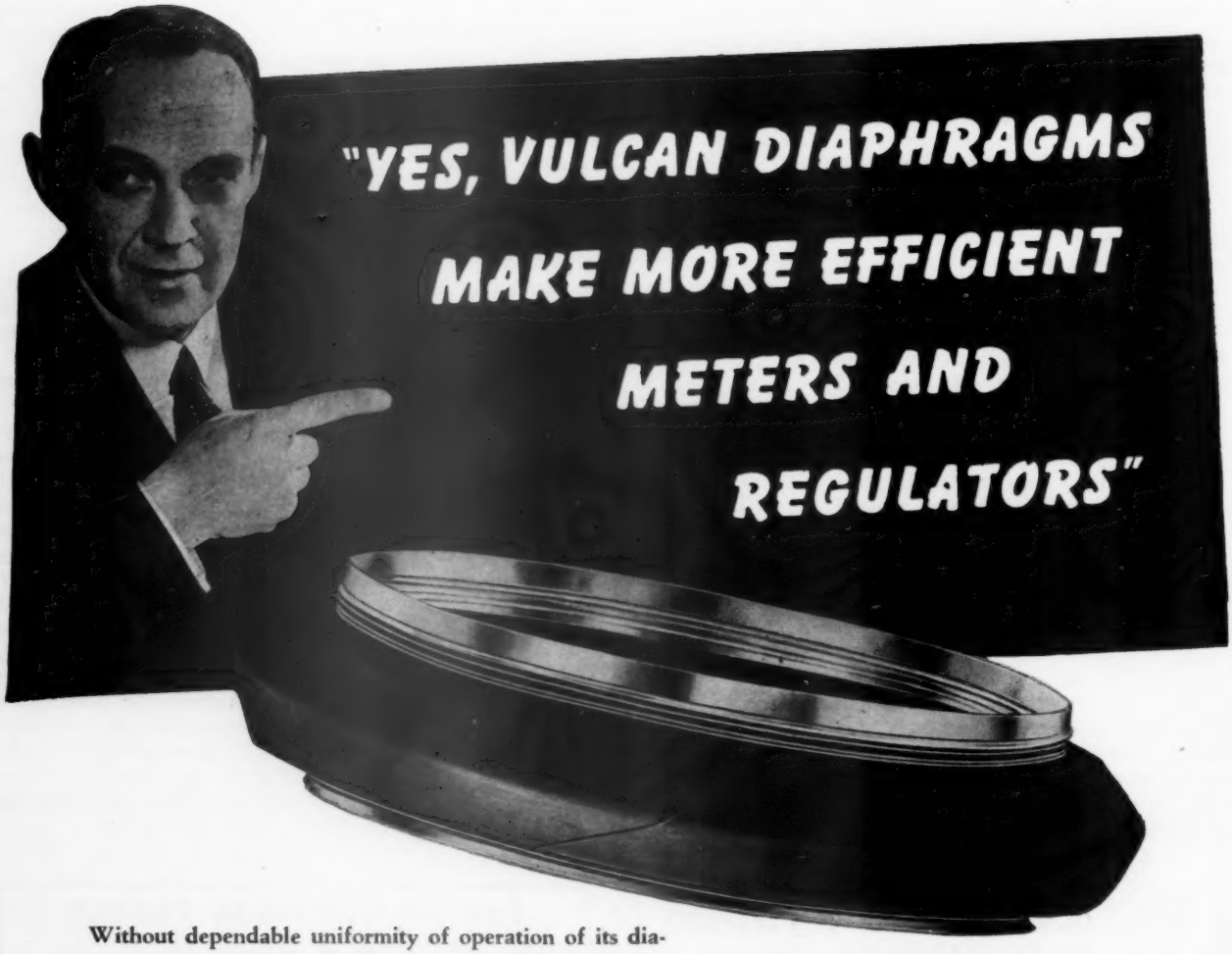

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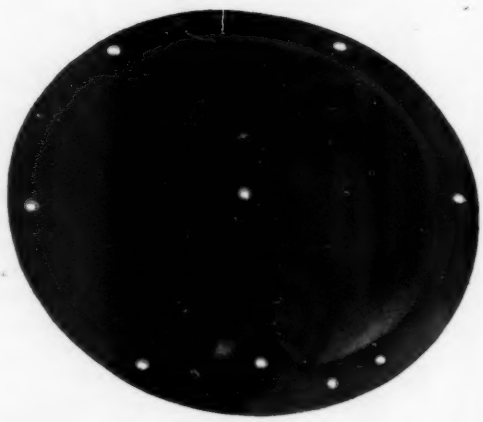

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RECENT COURT DECISIONS
Affecting Gas Utilities

Right to Cut Off Gas Supply

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

AS A GENERAL RULE, a gas company may adopt and enforce as a reasonable regulation for the conduct of its business, a rule that service supplied to a customer may be shut off from one who has defaulted in the agreed payments. An obvious reason for this law is that if gas companies were required to file suits for collection of compensation for the service an indefinite number of actions to collect very small bills against scattered consumers always would be in the courts.

On the other hand, modern courts consistently have held that when an honest dispute arises between a public utility company and a customer over a charge, the company cannot lawfully discontinue its service for nonpayment of the disputed charge, and if it does a court may compel it, by injunction, to furnish necessary service. Moreover, the court may award damages for loss or damage suffered by the consumer resulting from the discontinuance of service. See Poole v. Paris Mountain Company, 81 S. C. 438; Schultz v. Lakeport, 44 P. (2d) 683, 685.

In other words, if gas company officials threaten to shut off gas service because of nonpayment of an account, where there is a bona fide dispute as to the correctness of the amount, this is a sufficient ground for an injunction to be granted by the court to prevent such discontinuance of service.

On the other hand, for comparison see Roman, 132 Pa. 288. This higher court held that a city which owned and operated a gas plant may adopt and enforce a valid regulation that in default of payment for gas consumed within 10 days after a bill is rendered to a consumer, the flow of gas will be stopped until the bill is paid. Furthermore, the gas company is not liable if under these conditions the gas supply is shut off.

Also, in Bower, 37 Pa. Super. Ct. 113, the higher court held that a corporation which leased a plant from a city could adopt and enforce reasonable regulations to insure prompt payment for gas if no prohibition clause was in the lease.

And again in Sling, 144 N.Y.S. 740, the higher court upheld the validity of a statute authorizing a gas company to demand a deposit to secure payment of the gas to be used for 2 months. This court held that the gas company could without liability shut off the gas if a customer refused to make a deposit to cover 2 months gas service.

Also, see Hensey, 93 N.Y.S. 114. Here a statute authorized gas companies to cut off the gas supply of customers who neglected or refused to pay within a specified period the charges due the company. The higher court held that a gas company had the right to cut off a supply although the customer *subsequently* and after expiration of the time for payment made a deposit in accordance with provisions of the statute.

On the other hand, see Dever, 34 Pa. Co. Ct. 202. In this case the higher court held that a gas company may lose its legal right to cut off a customer's supply of gas, for nonpayment of a monthly bill, where after sending a notice to a customer that his gas would be shut off the company continued the service and sent him the bill for the following month, including the former bill.

And in Wink Gas Company, 42 S. W. (2d) 819, the court held that if a customer fails or refuses to pay a just overdue bill, and the company thereafter practically abandons the collection of such bill, and permits the claim to become stale, without exercising its right to cut off service to the customer, then under these circumstances the company forfeits its right to cut off the gas supply.

Charge Not Billed

Modern higher courts consistently hold that a gas company has no right to cut off a customer's gas for nonpayment for gas used by him which charge was not included in the bill rendered to the customer.

Another important point of law is that if no state law authorizes a valid lien on premises for an unpaid gas bill, the gas company has no right to cut off the supply of gas for refusal to pay a disputed charge or bill *for a special service*, although it has power by a state statute to cut off the supply of gas for default of payment of regular charges. See Re Commercial Bank, 20 U.C.Q.B. 233.

Moreover, a gas company has no right to cut off the supply of gas to a customer for his nonpayment of the arrears due from a former occupant or owner of a building, unless a state law extends liens on the property for these past bills. The mere fact that a city ordinance gives the company the right to compel payment of a bill which it is not the duty of the customer to pay, cannot justify shutting off the service. A state law must grant this authority. Otherwise, the new tenant may demand and receive service irrespective of delinquent bills owed by former tenants, or owners of the building. But, see Wilkes-Barre Gas Company, 206 Pa. 254, 55 A. 974. This court held that a municipality or gas corporation may by ordinance or by-laws make reasonable rules and regulations to insure the payment of bills by present users or consumers.

In another case (167 Atl. 207) the higher court held that nonpayment of a bill for gas supplied at one house would not justify cutting off the supply from another house, where the contracts for the houses were separate. The court said:

"The contracts for the 2 houses were separate and distinct and in no wise dependent. They were entered into at different times, each for its distinct

property. The bills had been made out and rendered separately. Each house had its own meter."

Company Not Negligent

Obviously, if a gas company is not negligent it cannot be held liable for failure to supply gas under an ordinary agreement.

For illustration, in Waukesha Gas and Electric Company v. Waukesha Motor Company, 190 Wis. 190, a manufacturer claimed damages because a gas company failed to furnish an adequate supply of gas for the operation of its plant. The testimony established that there were temporary interruptions in service, but the court found that the causes of interruptions were beyond the control of the gas company and held the company not liable for freezing of gas mains.

On the other hand, in Bissel v. Eastern Ill. Utility Company, 222 Ill. App. 408, the court held that there was a duty upon a company to use all reasonable care to conform to an ordinance which provided that means for commercial lighting and power should be maintained at all times both day and night. However, the court held that the company's liability was not that of a guarantor.

In other words, under no circumstances is a gas company an absolute insurer that it will supply continuous service or gas unless it *contracts* to do so. Modern higher courts hold that a contract of this nature is valid. See Arkansas, 164 S. W. (2d) 1000. This court said that a gas company may make a valid contract to supply uninterrupted service.

Gas Company Delays Service

Modern higher courts hold that it is the duty of the holder of a public franchise to serve impartially all the members of the public who apply for and have made the necessary arrangements to receive service. This rule of law is particularly applicable to the general public which pays or offers to pay the price for service and abides by the reasonable rules and regulations of the gas company.

Failure or neglect of the gas company to provide service within a reasonable period of time may result in an injured patron being entitled to recover damages. However, in order to recover damages the person who filed suit must prove *positively* that the delay in providing service was the proximate cause of the injury. Otherwise the gas company is not liable.

For illustration, in Smith, 75 Fed. (2d) 413, it was shown that a gas company delayed from 9 o'clock in the morning until 4 o'clock in the afternoon in installing a gas meter after its employes had promised to connect the meter *at once*.

The weather was extremely cold and the patron contracted a severe cold. He sued the gas company for damages. The gas company proved that the patron failed to use ordinary care to protect himself against exposure. Therefore, the higher court refused to hold the gas company liable.

On the other hand, see Coy, 146 Ind. 655, where the higher court indicated liability on the part of a gas company for sickness and death of children. The testimony disclosed that the gas company failed to supply the needed gas in severe winter weather to a dwelling house. It had agreed to supply gas to this dwelling.

The children contracted illness and one child died. This court said:

"It cannot be said, in view of the authorities that a gas company occupying the streets and alleys of a city or town, by virtue of a franchise granted for that purpose, may, at its pleasure, withhold the fuel at its disposal, and which may be the means necessary for the comfort, health or even life of the inhabitants."

Suspension of Service

Various higher courts have held that a gas company is under an implied obligation to notify a patron of its intention to shut off the gas temporarily. See Beyer v. Consolidated Gas Company, 60 N. Y. Supp. 628; and Hoehle v. Allegheny Heating Company, 5 Pa. Super. Ct. 21. Also, see Beyer, 60 N. Y. Supp. 628, where a tenant was sleeping in an apartment building room where a gas stove was burning when the employes of a gas company, at the request of the landlord and without notice to the tenant, temporarily shut off the gas for the purpose of repairs.

When the gas was turned on the tenant was almost overcome by the gas fumes. He sued the gas company to recover damages. This court said:

"Undoubtedly, when these men went to that place for the purpose of interfering with the flow of gas through the pipes, it was their duty to use proper

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care to see that the occupants of the rooms had an opportunity to protect themselves against the results which follow from tampering with the flow of gas."

Also, see Hoehle, 5 Pa. Super. Ct. 21. The facts of this case are that a gas consumer was convalescing from an attack of typhoid fever. He was dependant on a gas heater on a cold day. For the purpose of making repairs to the gas main, the gas was shut off without any notice. As a result the patron was attacked with a chill, relapsed, and died. The court held the gas company liable, and said:

"Suspension of service. It was said: 'A breach of its duty by turning off the supply of gas in cold weather capriciously or without reasonable notice or attempt to give notice to the plaintiff (consumer) when such notice was possible, followed up by a neglect or refusal to turn it on upon being notified and requested to do so, was a distinct wrong. . . .'"

On the other hand, see St. Paul, 89 Minn. 1. The facts of this case are that a tenant in an apartment building notified the gas company that his service pipe was out of repair. The gas company employe did not notify all the occupants of the building, but merely notified the proprietor in charge of the apartment house that the gas would be turned off temporarily.

A tenant was caused to be sick by gas which escaped from a stove after the gas was again turned on. He sued to recover damages. However, it is interesting to observe that the higher court refused to hold the company liable because the gas company employe had notified the proprietor of the apartment building that the gas would be cut off and the court held that it was the duty of the proprietor to notify his tenants.

Therefore, it seems that when roomers, or tenants, are under direct control of a landlord, the gas company is obligated to notify only the landlord. On the other hand, if the tenants occupy distinctly separate premises the gas company employes must notify all tenants and, also, the landlord.

Federal Power Commission

Penn-York Natural Gas Corp.

The Federal Power Commission has received a request from the Penn-York Natural Gas Corporation of Buffalo, New York, for authority to construct and operate a pipeline to transport and sell natural gas to the Dominion Natural Gas Company, Ltd. of the Province of Ontario, Canada.

Proposed facilities include construction of a pipeline with diameter ranging from 14 to 10¾ inches running from York, New York, at a proposed interconnection with the pipeline of New York State Natural, to a point on the Niagara River near Lewiston, New York, a distance of about 65 miles; and a 1200-HP compressor station on the proposed line about a mile from the proposed interconnection with New York State Natural's pipeline. The overall cost was estimated at $1,235,610.

Colo.-Wyoming Gas Co.

The Federal Power Commission has received an application from the Colorado-Wyoming Gas Company, Denver, Colorado, for authorization to construct a new gas transmission pipeline from Denver, Colorado, to Cheyenne, Wyoming, and a new compressor station on the proposed line. The application is contingent upon the approval by FPC of the application of Colorado Interstate Gas Company for the construction of an additional pipeline to Denver.

Construction costs were estimated by the cmpany at $1,415,000. Work on the project would begin in April 1947.

Hope Natural Gas Co.

The Federal Power Commission has authorized the Hope Natural Gas Company, Clarksburg, West Virginia, to construct and operate additional natural gas transmission facilities in West Virginia at an estimated construction cost of $4,552,000.

Proposed facilities include three 800-HP compressor units at the Oscar Nelson Compressor Station in Wyoming County, two 800-HP compressor units at the Loup Creek Compressor Station also in Wyoming County, two 1,200-HP compressor units at Jones Compressor Station in Gilmer County, two 2,000-HP compressor units and one new boiler with 125,000 pounds per hour capacity at Hastings Compressor Station in Wetzel County, and an aggregate of 58 miles of 20-inch loop line paralleling existing main lines connecting four compressor stations.

These facilities will be constructed and operated as integral parts of Hope's pipeline system in order to compress and transport additional volumes of gas for the maintenance of service to existing wholesale and retail customers.

Mich.-Wis. Pipe Line

The Federal Power Commission has received the Michigan-Wisconsin Pipe Line Company's acceptance of the certificate of convenience and necessity issued November 30, 1946 which authorized the company, subject to certain conditions, to construct and operate a $52,618,823 natural gas transmission system from Texas to Michigan.

The pipe line facilities authorized included 1069 miles of 26-inch and 22-inch main natural gas transmission pipe line extending from Hansford County, Texas, to the Austin Storage Field near Big Rapids, Michigan; two compressor stations, one in Hansford County and the other near Mt. Pleasant, Iowa; a branch transmission line to Wisconsin and lateral lines to the markets to be served.

Plan to Relax Certificate Procedures

The Federal Power Commission announced Jan. 20th that it is planning to take steps which will relax substantially the Commission's controls over improvements and extensions of facilities by natural gas companies.

Details of Proposal: It is concluded in the staff report that the delineation of "service areas" for individual companies on a geographical basis involving new markets is neither desirable nor feasible at this time. As a more appropriate alternative, it is suggested that the Commission should, by general rule, permit natural gas companies under the Act to proceed without specific authorization in providing any additional facilities not involving increased delivery capacity which may be necessary for improving service to their customers, and also in enlarging their facilities, within prescribed limits, for the purpose of serving the increased demands of present customers in markets already occupied and served. Facilities of an incidental character required for extending service to various new customers, involving additional loads not exceeding 50,000 cubic feet per day in each instance, also would be included under this proposed rule.

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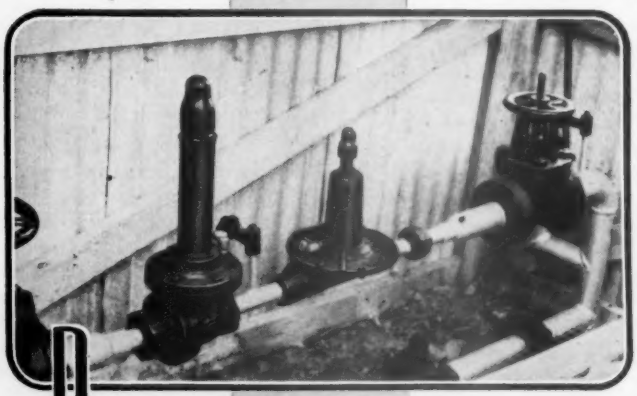

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JUST A CHANGE IN *Company Name*

• No change in policy. No change in management. And certainly no change in our efforts to provide the gas industry with the finest of purification materials. Just a change in name from Connelly Iron Sponge & Governor Co. to CONNELLY, INC. The research and development that have made Iron Sponge the industry's favorite purification agent are still going on just as they have for the past 72 years.

True, we've relinquished the manufacturing rights to back pressure valves, governors and manometers. They'll carry the Connelly name but will be made and marketed by another company. But we're still offering Iron Sponge, Caloroptics, H_2S testers and *p*H kits, and concentrating our efforts on these products.

Bring your purification problems, as before, to Connelly. The experience and the facilities to help you are here. And there's *still* no obligation.

CONNELLY, Inc.

3154 S. California Ave., Chicago 8, Illinois

Elizabeth, N. J. **Los Angeles, Calif.**

Accidental Ignition of Gas

By
A. W. Breeland
Supervisor of Safety,
Lone Star Gas Co.

UNDOUBTEDLY the greatest worry of all gas industry executives and supervisors from an accident standpoint is the fear of having a man burned or injured in an explosion.

We cannot eliminate oxygen, but we can to a very large degree eliminate the source of ignition. In addition to the known sources of ignition, there is the possibility of static electricity, soil currents and stray currents from power transmission lines. It is, therefore, important that steps be taken to prevent static or stray currents as a possible source of ignition.

Every effort should be made to eliminate the need for men working in gas. This should start with the blueprint. Equipment and facilities correctly designed and installed makes for less maintenance.

Our next step in controlling injuries from fires and explosions is a training setup which insures that employees are thoroughly trained in the jobs to which they are assigned.

The third step is to provide proper tools and equipment.

The final step is a program or plan of procedure which will insure that all of these steps are carried out.

Design and Engineering

Pipe lines and other gas handling installations and equipment must be designed and built properly to stand the maximum working pressure to which they might be subjected and to allow for future expansion. In this connection, let me emphasize the importance of requiring code-tested welders to make all welds which are to be subjected to gas pressure. It's fallacious to order pipe and fittings for 700 lb. W.P. and then to allow any welder to make the joints. The location of block gates to permit the draining of small sections of pipe line permits more frequent shutdowns for necessary work, reducing exposure to gas.

Another very important factor is to obtain, as nearly as possible, complete protection against corrosion and electrolysis. This cuts the leakage potential and thereby reduces the possibility of exposure.

The need for thorough training of the men who must be exposed to the hazards under discussion cannot be emphasized too strongly. Each man should not only know how to perform each step of his job correctly, but he *must* also know the accident potentials in connection therewith and how to avoid them. He should know how and when to use protective equipment and how to give first aid.

He must be thoroughly trained to try to eliminate all potential sources of ignition before commencing a job where he is likely to be exposed to gas or gasoline vapors. This includes the removal of all matches,, cigarette lighters and welder's torch lighters from clothing.

Much of our knowledge has been gained the hard way. We lost one man, had another seriously burned, and lost a plant in 1931 because the operator thought that a quick way to shut an engine down was to pull the spark plug wire from its connection. On that occasion a discharge header failed, filling the compressor building with gas. The operator, in an effort to shut the machine down, immediately jerked a spark plug loose from its connection. Instantly there was an arc, and two terrific explosions, one following the other. That man was killed and his helper was severely injured.

All of our spark plug wires now have solid connections, making it practically impossible to pull the wire off. All operators are also instructed not to attempt to shut an engine down by pulling spark plug wires, and all stations are provided with quick closing valves for shutting off the fuel supply to engines and boilers. The stations built in recent years are equipped with power operated valves, remotely controlled, for shutting down compressor stations.

Men should be taught that when they have been exposed to gas and gasoline vapors, they must not get too close to an open fire or attempt to light a cigarette until they are absolutely certain that all gas has escaped from their clothing or until they have changed clothing. In the case of gasoline vapors, clothing should be removed before getting near an open fire or striking a match.

An employee was seriously burned while testing a large capacity positive meter inside a meter house. Up until that time the meter prover discharged inside the building, if the meter was located in one. Our Safety Department had previously recommended that the critical flow meter have an extension attached to discharge outside the building. We were informed that such an extension would result in too great an error in the tests. After the fire just mentioned, further tests were made and it was discovered that the percentage error was actually so small that it was negligible.

Tools and Equipment

I do not believe that there is sufficient data available on the so-called "spark proof" tools to prove that they are of any material help in preventing fires. On the other hand, experience has shown that fires have been started from those tools. I think that our metallurgists and engineers still have a job of turning out a "spark proof" tool.

In low pressure work, adequate gas main bags and safety gas main stoppers should be kept on hand and maintained in good condition at all times and should be used when needed.

For high pressure lines, vents to fit the various size lines should be part of the working tools and should also be used when needed.

Gas main bags and stoppers are very commonplace to gas men but vents have only been in general use for a few years. It is rather difficult to get a gate valve to make a complete shutoff, with the result that when a section of a line is put out of service, there will nearly always be some gas leaking by the gate. When the line is cut for replacing pipe or for replacing or installing a fitting, some gas will always escape. Fatal fires have resulted from accidental ignition of this escaping gas.

Our present pipe vents are made somewhat as follows: A center ring is split circumferentially. To the half of the ring a circular plate is welded. The plate is center-tapped and threaded, one or two inches depending on the size pipe line on which it is to be used. Two straps are then welded onto the outer edges of the circular plate, directly opposite each other and tapped for standard size Dresser bolts.

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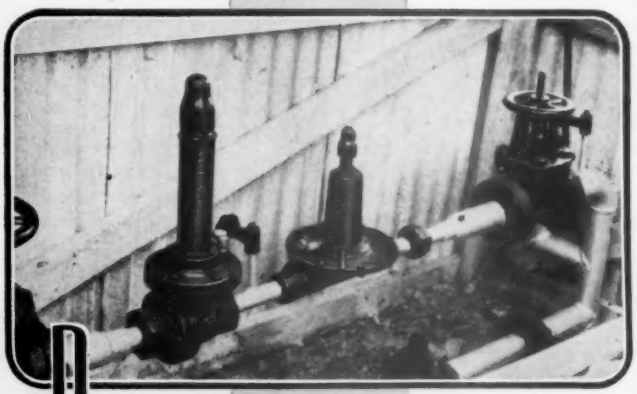

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The installation on the pipe is made as follows: First slip a follower and then a gasket over the end of the pipe, place the cap in position, bolt up the two bolts, screw an ell into the end of the cap, screw in a short joint of pipe. All escaping gas will then be vented into the air, well above the bell hole.

Of course this requires workmen to be exposed to the escaping gas during the short interval while the vent is being installed and also between the time it is removed and the line is re-connected. On change-outs this vent materially reduces the time of exposure. It is necessary to have vents for each size line.

We have had several unexplained pipe line fires. One of the worst occurred in 1940. The investigation of this fire was very thorough and we felt that we ruled out all of the possible sources except that of a spark from either a static charge or stray current. An interurban and a high tension power line crossed this line at right angles a few hundred yards from the point of the fire. The gas was ignited just after the line was separated.

As a result of that experience, all of our transmission line crews are equipped with bonding clamps and cables and are instructed to make a bond around any cut which is to be made, before the line is separated. This eliminates one possible source of ignition.

All compressor buildings, measuring and regulator installations, gas-making plants, and any building or location where gas is likely to be unconfined and where illumination is necessary must be equipped with explosion-proof electrical equipment. Battery operated hand lamps and flashlights which are used in gas and gasoline vapors should also be of the approved type.

For years we have had tapping machines for tapping low pressure lines but it was only a few years ago that one was successfully developed for tapping high pressure lines. This apparatus not only makes taps on high pressure lines without any leakage of gas, but, with the aid of this equipment, plugs, which serve the purpose of plug or gate valves, may be installed in lines under pressure allowing a section of pipe to be replaced without exposing workmen to gas and without service interruptions.

Plan of Procedure

As an example of the necessity of a plan of procedure, let me illustrate our own company's plan of procedure for repairing leaks on transmission lines.

When a leak has been detected or reported, the man in charge, usually a district foreman, will either have his assistant investigate the leak to determine the kind of repair necessary or will make the investigation himself. When the foreman investigates the leak, which usually requires digging out to determine the nature of leak and the kind of repair required; he should decide whether it can be repaired (1) under full pressure, (2) whether it should be repaired under reduced pressure, (3) or whether the line must be shut down completely.

Before the foreman decides whether or not to repair the leak under pressure, he should determine as nearly as possible whether the leak is from internal corrosion, external corrosion, sand holes or split pipe. Since the bottom of the line is most vulnerable to corrosion, either from inside or outside, many leaks are found on the bottom of the pipe.

Lap-welded pipe was used in many of our older lines and since little attention was paid to the position of the seam in the line, it becomes increasingly more important that the man in charge of the repairs be able to determine whether the leak is in a seam. If so, it will then be necessary to determine whether the leak results from internal corrosion, external corrosion, or a split in the pipe before deciding whether repairs may be made safely under pressure.

In the event the leak is in or near a coupling or sleeve, it is extremely important to determine how much pipe is still under the coupling or sleeve before attempting to do very much under pressure.

When there is doubt in the mind of the supervisor as to whether the repairs may be made under full pressure, he should either call for reduced pressure or for a complete shutdown.

When the foreman has completed his examination, he should instruct a repair crew to assemble proper tools and equipment and to proceed to make the repairs.

In addition to the necessary material and tools for making repairs, the truck or pickup should be equipped with first aid kits, respirator, dry chemical fire extinguisher, an adequate supply of goggles, and spark resisting picks and hammers.

In the event it is necessary to remove one or more joints of pipe, fitting, or to cut the line for any purpose, the repair crew will take a grounding line with connections and pipe vents.

Because of the ever-present possibility that a pipe line will act as a conductor for static electricity, stray currents from power lines, or soil current, and the resulting spark when the line is severed or re-connected, a bonding line should be securely fastened to the line on both sides of the proposed cut before the line is separated and re-attached before re-connecting. This eliminates one source of ignition.

In the event of a replacement of pipe or fitting requiring the line to remain open for some interval of time, for the purpose of cleaning up or enlarging the ditch or bell hole, the gas escaping from either end of the pipe should be vented out of the ditch bell hole so that it may be dissipated in the atmosphere, thus eliminating the hazard of fire or explosion while the ditch is being cleaned, or while other necessary work is done before replacing pipe or fitting.

Paper presented at meeting of National Safety Council, Chicago, Ill., October 8 to 11, 1946.

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Nearly a half century of service to the Gas Industry.

The Reliable Shut-Off for Street Mains

Safety Gas Main Stopper Co.
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H. E. Beane Becomes General Sales Manager

H. E. Beane has been appointed General Sales Manager of The Bristol Company, Waterbury, Conn., according to an announcement by Howard H. Bristol, President of the Company.

Starting as a sales engineer, Mr. Beane has been associated with The Bristol Company since 1920. From 1925 to 1935, he was District Manager of various branch offices of the company. He became field sales manager in 1936, and sales manager in 1943.

First U. S. Test Made In Underground Gasification of Coal

Experiment Conducted at Gorgas Mine of Alabama Power, Near Birmingham

An Army incendiary bomb was lowered through a hole drilled beneath the surface of a seam of coal at the Gorgas mine of Alabama Power Co., near Birmingham, Ala., in mid-January, and within a few hours an intent group of scientists witnessed the first controlled demonstration in this country of the underground gasification of coal.

The experiment—conducted jointly by the power company and the United States Bureau of Mines—has more than ordinary significance for many in the coal and gas industries, as well as for many users of these and other fuels. It has been pointed out by those who have studied Russian experiments of the same kind, and who have held high hopes for the process here, that at the very least, underground gasification offers a revolutionary method of producing useful, low-cost energy from surface deposits of coal and lignite which, up to date, have gone unexploited.

Much remains to be learned from the Alabama experiment, which is scheduled to be continued for some weeks to come. As one of those who watched the start of the experiment remarked in reporting on it, "we all felt much as Watt must have felt when he first saw his steam engine operating, and we knew just as little of what would come of it."

Soon after the non-explosive type incendiary bomb was ignited thirty feet below the earth's surface, engineers and researchers on hand from the power company, the Bureau of Mines and a number of important coal companies, had the answers to many of their questions.

Continuous combustion took place at the bottom of the U-shaped drill cutting around and under a 900-ton block of coal—part of the surface seam selected for the experiment. A blower, supplying air at the rate of 10,000 cubic feet a minute, at one of the drill-ends, supported the underground fire.

Gas recovered at the mouth of the other drill, after twenty-four hours, was found to have a heat capacity of 30 B.T.U. (British Thermal Units). By injecting steam, in one of the first special tests to be conducted, water gas having a 250 B.T.U. content has been produced. Up to the present, no oxygen has been introduced at the feed aperture, but extensive tests are planned for this method of stepping up the combustion. Shipments of 99.5 per cent pure oxygen are expected to arrive soon for these tests. Under the present arrangements, coal in the seam burned during the first twenty-four hours at the rate of ten to fifteen tons a day.

L. M. Smith, vice-president of Alabama Power, who reported these results of the initial tests, emphasized that only a bare start had been made in determining the characteristics of the process and the resulting fuel being obtained.

He said the tests were currently halted by a mechanical failure of minor importance but were expected to be resumed soon, and that if necessary further tests would be carried out on other seams of coal at the site. The experiments are expected to cost between $50,000 and $75,000, he said.

Among those who were present to observe the start of the tests were Milton H. Flies, manager of coal operations for Alabama Power Co.; Dr. W. C. Schroeder, chief synthetic liquid fuels division of the Bureau of Mines; Joseph D. Davis, supervising chemist of the Bureau of Mines; George D. Creelman, director of research of M. A. Hanna Co.; Joseph Purstlove, of Pittsburgh Consolidation Coal Co., and W. G. Scharmann, senior engineer of Standard Oil Development Co.

Solid Mineral—Fuel Reserves of U. S. A.

Although liquid and gaseous fuels make up only 1.2 per cent of the mineral-fuel reserve of the United States, the reserves of coal and lignite can be used to supplement declining reserves of natural gas and petroleum for "certainly not less than 1,000 and probably for 2,000 years," according to Arno C. Fieldner, chief of the fuels and explosives branch, Bureau of Mines, who spoke in December during the fuels session of the Annual Meeting of The American Society of Mechanical Engineers.

Mr. Fieldner estimated the presently proved fuel reserves of the United States at an energy equivalent of 2.6 trillion tons of bituminous coal having a heating value of 13,000 B.t.u. per pound. Coal and lignite comprise 98.8 of this reserve. Fifty-five per cent of this solid fuel reserve consists of high-volatile bituminous coal, 23 per cent subbituminous coal, 19 per cent lignite, 2.5 per cent low-volatile bituminous coal, and 0.5 per cent anthracite.

"All of these fuels can be converted by suitable processes to gaseous and liquid fuel," he said. "Satisfactory fuel gases have been manufactured from coal or from coke and petroleum for many years. Processes and equipment for this purpose have been well-developed, and the costs are known. In recent years in Germany, in particular, processes have been developed and put into commercial operation for the manufacture of liquid fuel from coal and from lignite.

"It is quite reasonable, therefore, to assume that plenty of gaseous and liquid fuels will be available in the future for many years, probably a thousand," he continued, "and, of course, for a much longer period if atomic energy can be harnessed economically for the generation of heat and power. The cost probably will be greater than the present cost of petroleum and natural gas, but future developments in the more efficient utilization of fuels should go far in offsetting the cost of conversion."

Sources of Synthetic Liquid Fuels

Mr. Fieldner said that petroleum may be supplemented by: alcohols from the fermentation of vegetable matter; conversion of natural gas by the gas-synthesis process; distillation of oil shale; liquefaction of coal or lignite by the high-pressure hydrogenation process; and conversion of water gas from coal or lignite by the gas-synthesis process. Any or all of these supplementary sources may come into use as petroleum supplies decline to the point where these higher-cost synthetic products become commercially competitive with natural petroleum products.

Also the two processes for the direct production of synthetic liquid fuels from coal or lignite are the coal-hydrogenation, or Bergius-I.G. process, and the gas-synthesis, or Fischer-Tropsch, process, he said. Both processes were invented and developed in Germany and were in commercial use in Germany for several years before the beginning of World War II. Liquid fuel is a primary product in both processes; combustible gases and solid waxes are obtained as byproducts.

Synthetic Gases from Noncoking Coal

"No processes are operating commercially in this country for the production of fuel gases from the low-rank noncoking coals that predominate in the western states," he said. "However, such processes have been developed and were in commercial operation before and during the war in Germany. These methods probably can be modified for the gasification of American lignite and subbituminous coal, and it is possible also that new methods may result from American research now in progress in several organizations.

"The Bureau of Mines has developed an annular metal-alloy retort which is now in pilot-plant operation at Grand Forks, N. D. A gas of high hydrogen content having a total heat of combustion of about 310 B.t.u. per cubic foot is obtained."

Large Volume Water Heating

A series of Articles for the Engineer, the Architect, the Salesman and the Contractor. They show how to select and install correct types of Water Heater Systems for specific purposes.

By

Malcolm B. Mackay

The Burkay Company

CHAPTER VIII—Part 1

Initial Installation and Operation of Water Heaters and Water Heating Systems

(a) Automatic Gas-Fired Storage Water Heaters

THE installation of Automatic Gas-Fired Storage Water Heaters, requiring connection of the heater to cold water and gas supply and hot water discharge piping and proper venting of the heater to flue or chimney, involves little, if any possibility of mechanical error if the instructions of the manufacturer are followed in detail and due consideration given to the factors listed below:

(1) The Heater should be located at a point convenient to flue or chimney and, if possible, at a point approximately equidistant from all hot water outlets.

(2) The size of the flue pipe should be *not less* than that specified by the manufacturer or that shown in available tables for the rated gas input.

(3) Horizontal runs of flue pipe should "pitch" upward toward the chimney connection and should run as direct as possible avoiding unnecessary bends or elbows. The back draft diverter, supplied by the manufacturer, or other approved draft hood of adequate size should be employed.

(4) Many municipal and other building codes *prohibit* the venting of gas fired equipment or appliances to a common flue or chimney with coal or oil fired equipment. Where regulations do not require venting of gas-fired equipment to a separate flue and it is vented to a common flue with coal or oil fired units, the flue pipe of the gas-fired water heater or other appliance should be connected to the chimney at a point *above* the flue pipe from the coal or oil fired equipment.

(5) The gas meter must be of adequate size or capacity to supply, not only the requirements of the water heater, but also the requirements of all other gas-fired equipment.

(6) The gas supply line to the water heater should be adequate in size to supply the full rated gas input of the heater at the available pressure, taking into consideration the pressure drop through the supply line. A *separate* gas supply line from the meter to the water heater should be employed if the existing line from the meter is *too small* to supply the *combined* requirements of the water heater and such other equipment or appliances as may be connected to it. The required size of gas supply line may be easily and readily calculated by means of the "Low Pressure Gas Flow Computer."*

(7) If a "Building Circulating Loop" is employed to maintain circulation of the hot water supply throughout the building for the purpose of making the hot water more readily available at each fixture, the return line from the circulating loop should be connected to the cold water supply line to the heater. A swing type Check Valve *must* be installed in a *horizontal* section of the return line at a point as close to its connection to the cold water supply line as possible to prevent possibility of back flow of cold water to the hot water outlets of fixtures which may be connected to the "Circulating Loop" at a location which may be closer to the cold water supply line than to the water heater. If a Check Valve were *not* employed and the pressure drop in the line between the cold water supply line and hot water outlet were *less* than the pressure drop in the line between the heater and the hot water outlet, cold water could flow to the hot water outlet.

Where a Circulating Pump is employed to *accelerate* the circulation in a building hot water supply loop, it should be installed in the return water line at a point as close to its connection to the cold water supply line as possible. To eliminate the unnecessary wear and expense incidental to operating a circulating pump continuously, it should be controlled by a direct acting Aquastat installed in the return circulating line at a point conveniently close to the pump. It is suggested that this aquastat be adjusted to *"close"* the pump circuit when the water in the return line *drops* to 100 to 110 degrees, F., and *"break"* the pump circuit when the water temperature at that point *rises* to approximately 120 to 130 degrees, F., if the desired hot water temperature at the fixtures is approximately 130 to 140 degrees.

(8) Excessive water pressure and temperature must have provision for *relief* by means of a combination temperature and pressure relief valve or separate temperature and pressure relief valves. If the combination valve is employed, it should be installed in a separate tapping in the *top* of the hot water storage tank or, if a separate tapping is not available, in the hot water discharge line to the fixtures at a point *as close* to the tank as possible.

The relief valve should be installed in the upper end of a Tee, the lower end of which is connected to the tapping in the top of the hot water storage tank by means of a close nipple. The hot water supply line to the fixtures is then connected to the branch of the tee. If the Relief valve is located in the hot water supply line to the fixtures at a dis-

* *Available from the* AMERICAN GAS JOURNAL, *New York City.*

tance greater than *four inches* from the tank, excessive temperature generated within the tank may result in serious *damage* before the excessive temperature is communicated through the water and piping to the relief valve.

Where separate temperature and pressure relief valves are employed, the temperature relief valve should be installed in the top of the hot water storage tank or as close as possible to the tank in the hot water supply line to the fixtures as described immediately above, and the pressure relief valve in the cold water supply line at a point as close to the hot water storage tank as possible.

The rated capacity of temperature relief valves—in B.T.U.'s per hour—should *equal* or *exceed* the input capacity of the water heater—in B.T.U.'s. per hour.

Pressure relief valves should be adjusted to relieve at a water pressure approximately 20 pounds above the static pressure of the water supply.

(9) The Building and/or Safety Codes of at least one State and of many cities require the use of "Dip Tubes" in the hot water storage tanks of automatic, storage water heaters or recovery water heating systems while other codes prohibit their use.

The apparent purpose of such code provisions prohibiting the use of cold water supply dip tubes in the tanks of under-fired, storage water heaters, is to prevent the possibility of developing dangerously excessive temperature and/or pressure in the tank if the gas supply to a *manually* controlled heater is not turned "Off" or the safety controls of an automatic heater fail to function. Under such circumstances the water in the tank would drain down to the level of the holes drilled in the dip tube close to the top of the tank or down to the level of the bottom end of the dip tube before the syphon action would be broken. The water remaining in the tank—being practically at zero pressure—would vaporize rapidly if automatic temperature and/or safety controls failed to function or the gas supply were not shut-off. The steam thus generated in the remaining space in the upper portion of the tank would create a personal scalding hazard if communicated to the hot water supply piping and outlets or could attain sufficient pressure to rupture the tank or piping.

On the contrary, an equally hazardous condition would be created if the tank of a storage water heater *not* equipped with a cold water supply dip tube were *completely* drained. If, under this condition, the gas supply to a manually controlled heater were not shut "Off" or the thermostatic and/or safety controls of an automatic type of heater failed to function with the gas valve in the thermostat in the "open" position, *explosive pressures* would be almost instantaneously developed if cold water were introduced into the empty heated tank.

To avoid such hazards, the gas supply to *either* a manually controlled or automatic, storage water heater should *always* be shut off *before* draining the tank of the heater or the entire hot water supply system.

Where the use of a "Cold Water Dip Tube" installed in a tapping in the top and extending to a point close to the bottom, of the hot water storage tank is prohibited, the cold water supply line should be connected to a tapping *as close to the bottom* of the tank as possible. If the cold water enters the tank at a point considerably above the bottom, the water below that point will be in a more or less static state which may be conducive to more rapid deposition of lime or other scale on the tank bottom. Lime or other scale on the tank bottom retards the transfer of heat to the water if the heater is of the Under-Fired type and impairs its efficiency.

(10) The "Lighting and Operating Instructions" supplied by the manufacturer should be read and thoroughly understood by the installer *before* attempting to adjust the rate of Gas input and the thermostat or other automatic safety controls, particularly if the installer is not completely familiar with the design and construction of such controls. Before leaving the job, the installer should hang the "Instructions" card at a point convenient to the heater where it will be available for ready reference by the owner.

The return warranty registration card, if provided, should also be properly filled in by the installer and handed to the owner for mailing to the manufacturer. In many instances Warranty Provisions are *invalidated* if this registration card is not returned to the manufacturer.

(b) Automatic, Oil-Fired or Electric Storage Water Heaters

(1) The suggestions and essential factors governing the proper installation of gas-fired, automatic storage water heaters in "a", above, are *equally* applicable to the correct installation of Oil-Fired Water Heaters and—except for "a"-(2) to (6), inclusive—to Electric, Automatic Water Heaters as well.

(2) Installation of oil-fired and electric, automatic, storage water heaters also involves the correct wiring of oil burner motor or electric heating elements and thermostatic or other safety controls of the automatic type. Proper functioning of such units and controls requires that they be installed, wired and adjusted in *exact* conformity with the instructions supplied by the manufacturer.

(c) Instantaneous, Gas-Fired Water Heaters

(1) The installation of automatic, instantaneous, gas-fired water heaters, requiring connection of the heater to cold water and gas supply and to hot water discharge piping and proper venting of the heater to flue or chimney, likewise involves little, if any, possibility of mechanical error if the instructions of the manufacturer are fully observed. Proper functioning of the heater is also dependent on strict observation of the factors listed in paragraphs (1) to (6), inclusive, under "a"—automatic storage water heaters at the beginning of this chapter.

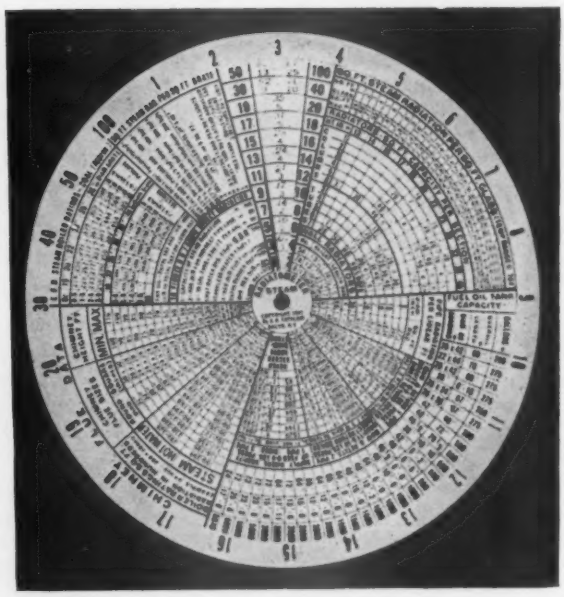
(2) Proper functioning of an instantaneous water heater does *not*, however, assure satisfactory *Performance* of the installation if the *Actual* recovery capacity of the heater—expressed in terms of rate of flow of hot water which the heater can supply *per minute* based on the number of degrees that the water must be raised in temperature—is inadequate to supply the hot water demand which may originate in the simultaneous requirement for hot water from two or more fixtures or outlets. For more detailed information in this connection refer to "(a)" under "(3)—Instantaneous Water Heaters" in Part 1 of Chapter *VII*, preceding. Directions for determining the *actual* recovery capacity of the heater will be found in Figure 12, Part 2 of Chapter *VI*, preceding. Descriptive information covering gas-fired, Instantaneous water heaters appears in "(2)" under "Instantaneous Water Heaters" in Chapter *I*.

(3) The necessity of restricting the flow of hot water from the heater to the *maximum* rate which will be available—based on the number of degrees which the water must be *raised* in temperature—cannot be too strongly stressed. Insufficient hot water temperature will inevitably result if the rate of flow is not so restricted.

Quick, Accurate Answers for Heating and Water Heating Jobs

solved by the

Heat-O-meter



Direct readings appear on the Heat-O-meter, covering factors entering into all heating calculations.

The Heat-O-meter employs three concentric celluloid printed discs. Outside disc, 6¼" diameter, is printed in red on both sides. The inner discs are printed in black with a cut-out V sector.

It covers sizes of mains, returns, risers, radiator sizes and capacities, round and sectional boiler net ratings, chimney flue sizes, capacities and heights. Also hot water and fuel tank sizes and capacities, hot water generator capacities, etc.

A real necessity and time saver for

Heating Engineers and Salesmen
Architects and Builders
Heating Contractors
Plumbers and Steam Fitters

The Heat-O-meter gives instant reply to all questions without laborious calculations. Used by many leading Heating Engineers. Price $5 each, postpaid.

AMERICAN GAS JOURNAL
53 Park Place, New York 7, N. Y.

Please enter our order for.....Heat-O-Meter at advertised price of $5. each.

☐ Remittance herewith ☐ Send C.O.D. ☐ Send bill.

NAME .....

ADDRESS .....

CITY ..... ZONE..... STATE.....

(4) The "Lighting and Operating Instructions" card supplied by the manufacturer should be read and fully understood by the installer *before* attempting to regulate the rate of gas input and/or pressure to the heater or adjusting the thermostatic, pressure or safety controls, particularly if the installer is not completely familiar with the design and construction of such controls. Before leaving, the installer should hang the "Lighting and Operating Instructions" card at a location convenient to the heater where it will be available for ready reference by the owner or operator.

The Return Warranty Registration Card, if provided, should also be properly filled out and handed to the owner for mailing to the manufacturer. In many instances the warranty provisions are voided by failure to return this registration card.

(d) Gas-Fired, Booster Water Heaters

(1) As a booster water heater—employed to raise already or partially heated water from an existing source or system to *higher,* and often, *sterilizing* temperatures as wanted—functions essentially as an instantaneous water heater, the installation data supplied in "C—Instantaneous Gas Fired Water Heaters," immediately preceding, is equally applicable to Booster Heaters and should be fully observed.

(2) Descriptive information covering booster water heaters, including Gas-Fired units, may be found under the heading—"Booster Water Heaters" in Chapter *III,* preceding.

(3) Attention is particularly directed to the fact that the temperature of the pre-heated water supplied to a booster water heater must—at *no* time—*drop below* a predetermined level if the required hot water discharge temperature is to be maintained. Conditions under which a gas-fired water heater of the instantaneous type should not be used as a booster are described under (4) in Part 1 of Chapter *VII.*

(e) Steam, Booster Water Heaters

(1) Except for again calling attention to the desirability of so connecting a *steam heated,* Booster Water Heater of the instantaneous type to steam and water piping that the steam will circulate through the immersed heating coils or tubing and the water through the shell or jacket of the heater as described in Part 1 of Chapter *IV,* little need be added to

(Continued on page 50)

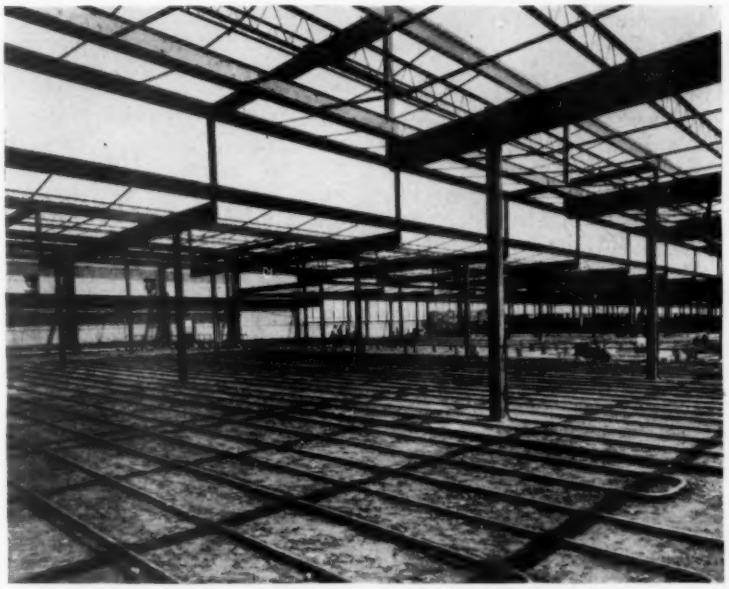
A. O. Smith Corp. Operates New Automatic Water Heater Plant

A PREVIEW of the new plant of the A. O. Smith Corporation at Kankakee, Ill., was held on January 9th to financial and industrial magazine writers of the middle west. On the 11th the plant was open for inspection to the citizens of Kankakee. The plant was in production, so that visitors were able to see each operation in detail. The plant is the largest in the world devoted to the manufacture of automatic storage water heaters. Its operation is expedited by nearly three miles of overhead conveyors on which, without upsetting operations, 1,000 inner tanks, flues and other parts can be stored, thus assuring a permanent flow of parts to the six assembly lines.

The production goal is 1,000 heaters per day and the current output is about 75 per cent of that figure. Full production is expected by next spring.

The radiant heating system in this plant is the largest on record. It consists of 60 miles of piping and will circulate 15,000 gallons of water 12 times per hour, or a total circulation of 180,000 gallons an hour. Heat will be furnished by 120 Smithway-Burkay volume water heaters operating on natural gas furnished by the Public Service Co. of Northern Illinois.

The piping consists of wrought iron, copper and steel. The wrought iron ranges from two inch down to three-quarter inch; the copper from one inch to three-eighths inch; the steel is five-eighths inch Bundy tubing. Primarily, the use of these materials was dictated by engineering logic. Secondly, however, necessity and exigency played their part. In the third place, the opportunity to experiment was not overlooked. Here was a chance to uncover the answers to many questions which today are puzzling the radiant heating industry. The company believed it would be remiss if it ignored this opportunity to make a contribution.



Two-inch wrought iron pipe on an extended center to center installation up to four feet in a combination of grid and continuous coil construction.

Three-eighths inch (nominal) copper tubing on second floor, south office building ceiling, installed on the "scratch" coat of plaster. Over this coat is placed approximately a quarter-inch brown coat and then about a half-inch of acoustical plaster. The tubes are one-half inch outside diameter and are installed on four-inch centers at the outside exposure, changing to five-inch centers, then six-inch, then eight-inch, then 10-inch as the required concentration of surface decreases.

Plant Proper

The plant is divided into 48 bays, each of which runs clear across the width of the plant (315 feet) and is 25 feet wide. Two heaters serve each bay, each heater serving panels which cover half a bay.

Eighty per cent of the installation in the floor of the plant is of grid type construction, consisting of headers and laterals of wrought iron pipe. Some of the grids have long two inch headers (140 feet) and

short 1¼ inch laterals (20 feet), while others consist of 20 foot headers and 140 foot laterals. Center-to-center dimensions range from four feet down to eight inches.

There are obvious advantages to the grid type construction. It is the best type to meet possible future changes in floor arrangements and foundations because new headers can be installed as needed around the new foundations. It permits mass production of headers and laterals and makes possible many welds at the point of manufacture rather than on the job. It also permits the use of random lengtss of pipe, which is a considerable economy.

For the first floor offices, wrought iron was used in grid type construction. Then, in the ceiling of the first floor offices, an auxiliary wrought iron surface was used at the outside exposures to add radiating surface for the second floor offices at the windows, and for the ceiling of the first floor. The office area heating job was completed with the installation of copper in a grid type and continuous coil construction, in the ceiling of the second floor offices so that heat will radiate downward.

The heaters are connected to the panels in a by-pass hookup so that the full heating capacity of the heater can be utilized.

There is obviously great flexibility in the system, since the plant is heated, in reality, by 120 small systems. Any area of the plant can be turned on or off. No serious heating problem arises if a bay or two must be shut off because of floor rearrangement. The whole vast heating system can be serviced by a single man who needs be acquainted only with a small, simple water heater. Any single area can be heated with peak efficiency even though the rest of the plant is not in operation.

Gas Water Heater Sales Promoted by Plumbers in Portland, Oregon

AS A PRELUDE to their bold and all-out bid for the automatic gas water heater market in their territory, members of the Portland Master Plumbers Association, Inc., attended a kick-off buffet dinner at which the colorful promotion was "unveiled" on the eve of its mailing to 85,000 Portland homes. President Arthur H. Bohren of the Master Plumbers presided at the meeting.

The mailing puts the Master Plumbers openly on record as recommending the automatic gas storage water heater and follows through with the suggestion that the Master Plumber is the man from whom to purchase it and to have install it.

Enclosed with each folder is a business reply postcard requiring no postage and addressed to the Master Plumbers in care of a postoffice box. From there the cards are distributed to the Master who is selected by the customer or, if no choice is indicated, to the shop nearest the home from which the reply originated.

The folder includes a directory of participating members of the Association by districts, such as east, north, northeast, etc., so in many cases the customer may go directly to a shop, thus making the cards not necessarily a complete measure of the campaign's effectiveness.

IS THE WATER HOT EVERY TIME YOU WANT IT HOT?
MOST FAMILIES USE HOT WATER 140 TIMES A DAY
An Automatic Gas Water Heater will keep an insulated tankful heated just right .. ALWAYS!
Our shop has just the right Automatic GAS Water Heater ready for immediate delivery and installation — and we are licensed and bonded so you are sure the job is in accordance with city codes.

Front of Promotional Hand-Out Folder for Plumber's use. Printed in black and green. Size 3½ x 6 when folded

Fred Kimball, Portland Gas & Coke Company promotion manager who assisted in producing the mailing piece, reviewed the utility's promotion on gas water heating and showed how the plumbers' promotion tied in with it. He also announced a special hand-out piece made available for Master Plumbers to attach to work orders and to be left with the housewife by the Journeyman making the call.

Designed to further pave the way for more automatic gas water heater sales for the Masters, the little black and green folder has a calendar on the back and also a coupon on which the name of the shop is rubber stamped. There is a coupon on which the housewife may indicate any desire for additional information on water heating—the coupon to be picked up by the Journeyman when he leaves.

Like the mailing piece, the hand-out promotes the Master Plumber as such, pointing out that plumbing is a profession and that the Master is also a merchandiser of plumbing equipment and fixtures, that automatic gas water heaters are available for immediate delivery and installation and that the Master Plumber is licensed and bonded to assure a job in accordance with all city code requirements.

A. O. Leech, the utility's manager of commercial and industrial sales, pointed out to the Masters the low cost of heating water with gas automatically and showed it in many cases to be as low or lower than sidearm methods.

Geo. P. Hough Appointed to A. O. Smith Co. Chicago District

The A. O. Smith Corp. announces that George P. Hough has been appointed executive administrator of the company's Chicago District, taking the place of Don T. Allen who resigned recently.

Hough has been with the company since 1939. He entered the Chicago Office in that year to direct the sale of pressure vessels which the company manufactures for the oil refining industry and the paper and chemical industries.

His activities kept pace with the increasing sales volume of the Chicago Office, as the company expanded into such fields as welding electrodes and equipment, and consumer products such as glass-lined water heaters and domestic coal stokers. In 1944 Mr. Hough was appointed asistant administrator in direct charge of several sales activities. Today, with six product sales managers and a force of 35, he will direct all sales for the company's products in the ten Middle-western states.

Stray Current Control System

The development of a new Stray Current Control System, said to offer a solution to the problem of how to prevent the damaging effects caused by electrolytic action on underground pipe installations, including gas mains, oil and water lines, conduits, telephone cables and similar items, is announced by the Cook Research Laboratories, Chicago. It is conservatively estimated that preventable electrolysis causes more than $50,000,000 damage annually in the U.S. in oil, gas and water industries alone.

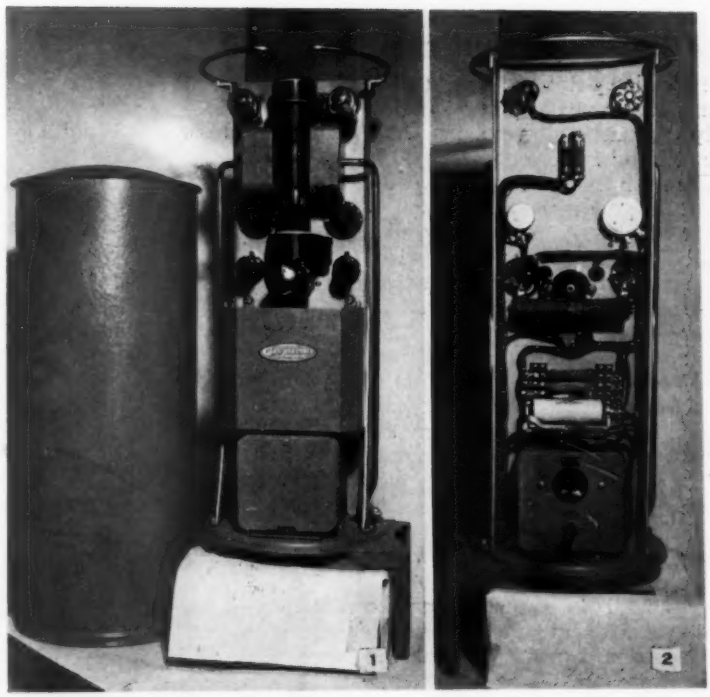
Dr. J. R. Downing, director of research at Cook Research Laboratories, stated that "engineers have recognized the habits of this electrolytic disease in pipe systems for many years, but, until the present development, it is believed that no satisfactory means of so minimizing its effects has ever been developed."

Electrolysis occurs when stray current in pipe lines seeks to escape through the surrounding soil, and in so doing touches off a reaction in which metal from the pipe is removed. This action is not to be confused with rusting, where weather and soil conditions play a far greater part in causing the corrosion.

Electrolysis of gas, water and oil mains is especially severe in areas where there is an overhead trolley wire or third rail, and the car tracks are utilized as a return circuit to the power house. Because these tracks are not the best conductors, and due to varying potentials in the rail, the current sometimes leaves the tracks and enters the ground. It is known as stray current in such cases. Using the surrounding soil then, as a conduction path, it travels through the earth to a neighboring pipe line. Here it continues to follow the pipe for some distance. Then due to a varying potential or some obstruction to its flow, the stray current leaves and either attempts to return to the overground rail or to enter another underground line.

At these points of current emission from the pipe, especially where the soil is damp, the presence of electrolytic action causes such deplating of metal that eventually the pipe wears through. To prevent this, the Stray Current Control System has been developed.

The Stray Current Control System may be described as a current and voltage-sensitive device, operating jointly on a high current contactor. The contactor is activated by the current and voltage sensitive device, the functioning of which depends on the amount of current or potential present in the pipe. This means when stray current tends to leave the pipe, the contactor will close; thereby connecting the pipe and rail with a solid metallic bond on which the current may travel harmlessly rather than by damaging electrolytic action through the soil. Conversely, the contactor will open *instantaneously* when the current tends to flow in the opposite direction, that is, from rail to pipe. In this manner the contactor will prevent the system from becoming a back-path for more stray current, which if permitted to flow uncontrolled would result in further electrolysis of the pipe.



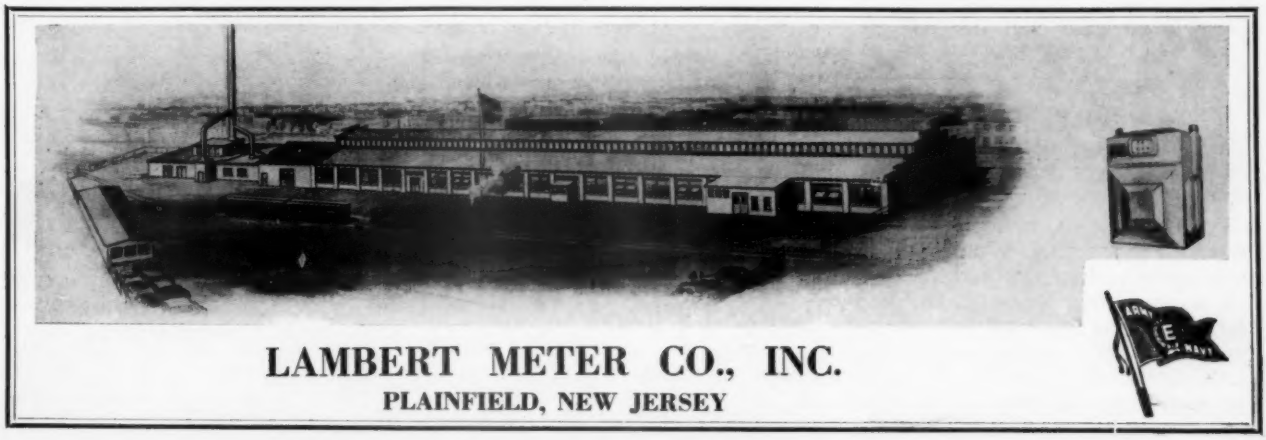
Stray Current Control System (1) Front and (2) Rear with cover removed.

A standard telephone-type pole cable terminal mounting will be used to house the Stray Current Control System. The unit is 26 inches high and 8 inches in diameter. This does not include the contactor, which is a separate unit, the size of which is not standard and will vary depending on the maximum amount of current to be allowed through the system.

The Stray Current Control System will weigh about 40 pounds ready for installation. It is built to withstand the most intense weather conditions with a minimum amount of wear, and is easily accessible for maintenance when necessary.

In the field, the system will be attached to telephone poles, bridges or any facility near the points at which the deplating of pipes due to electrolysis is occurring. One terminal of the system then will be attached to an offending rail and the other to the pipe in question. There is no definite restriction on the range of coverage for one of these systems. This will vary, depending on the resistance in the pipe and rail and the distance between the point of connection and the sub-stations which supply the power.

The Stray Current Control System is now under accelerated field tests in the Chicago area and will be ready for production in the near future. Patents have been applied for.



LAMBERT METER CO., INC.

PLAINFIELD, NEW JERSEY

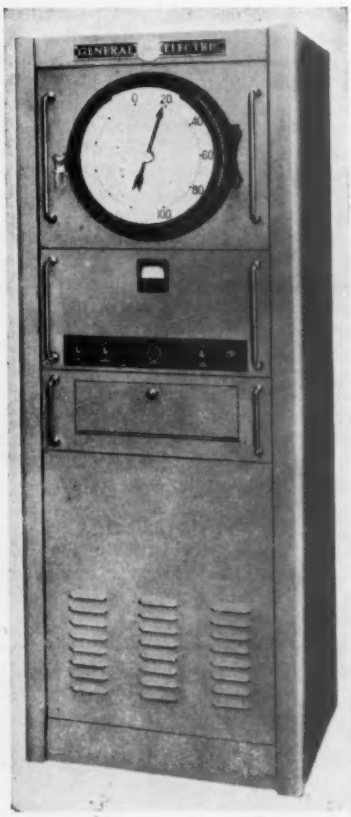
New Equipment

New Dewpoint Recorder

A new dewpoint recorder to determine automatically and continuously the amount of moisture in a gas is offered by the General Electric Company. It is designed for applications where the moisture content of atmospheres and gases must be measured or controlled, such as in checking furnace atmospheres, testing city gas, or determining the humidity of gases used in factory production processes.

This recorder is a combination of heater, refrigerator, mirror and gas chamber. The test gas enters the gas chamber and comes in contact with a metal mirror. The refrigerator and heater cool or heat the mirror until a temperature is attained at which moisture in the gas forms dew on the mirror.

A photoelectric eye watches the mirror, and the mirror temperature is recorded on a graph or chart the moment dew forms. Working in coordination, the refrigerator and heater hold this dewpoint temperature within a tolerance of two degrees so that a continuous reading on the chart is achieved. The dewpoint temperature that is recorded can then be converted into the moisture content of the gas.



G. E. Dewpoint Recorder

New AC Welder

Lincoln Electric Company, Cleveland, announces the new "Fleet-Arc" AC welder which is said to have many features not possessed by conventional AC welding units.

The new unit, equipped with the "Arc Booster," surpasses the conventional AC welders in ease of welding, depth of penetration, range of output, economy of operation, safety, dependability and service life.

Lincoln "Fleet-Arc"

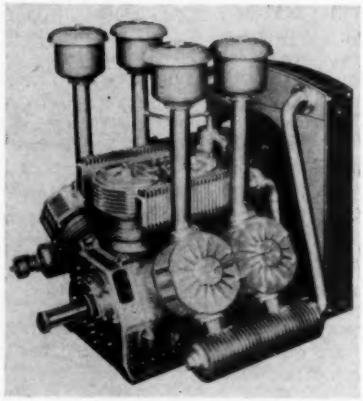
A selector switch on the front of the welder governs the amount of booster current to be used in striking the arc. This provides a complete range of striking intensity to suit requirements in the welding of thin sheets or heavy plates, making of tack welds, or in the use of various types and sizes of electrodes.

This welder, manufactured in 200, 300 and 500 amperage range, has both frame and housing of all-welded construction.

Air Cooled Compressors

Davey Compressor Co., Kent, Ohio, has announced a new line of air cooled portable compressors.

They are five models ranging from 60 to 315 c.f.m. capacity. All units are of V-type cylinder design, except the Model 315. The latter is of "W" construction with four low pressure and two high pressure cylinders. Units operate at relatively slow piston speeds through the use of short piston strokes.



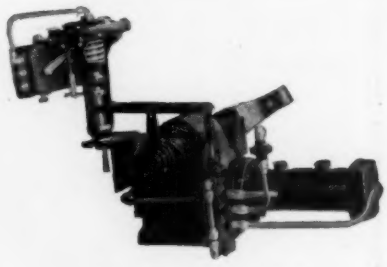
315 C.F.M. Compressor

Aluminum alloy compressor heads and manifolds are utilized in all models. Since aluminum has a much higher rate of heat conductivity than cast iron, this construction makes possible cooler compressor operation and freedom from valve carbonizing. The use of aluminum crankcases also makes possible substantial weight savings.

Available in industrial departmental, skid, steel wheel, pneumatic tired trailer, and flanged wheel units. Bulletin on request.

Hydraulic Valve Control

A recent development of Askania Regulator Company, 1603 South Michigan Avenue, Chicago, Illinois, is an oil operated hydraulic booster cylinder for air operated controllers. Using a standard diaphragm top it provides high power amplification and permits exact positioning of heavy dampers, valves and the like in accordance with the applied pneumatic loading pressure—usually 0-15 p.s.i.



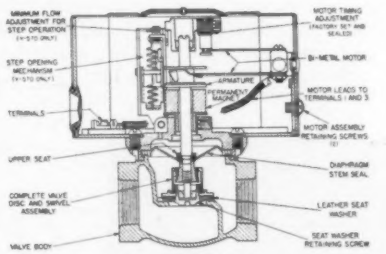
Askania Booster Control

The cylinder may be of the crank type, as shown, or of the straight reciprocating type. Straight cylinders are available up to 8" bore and 30" stroke.

and Appliances

Electric Gas Valve

The V-570 electric gas valve provides partial opening at initial operation to permit soft, quiet ignition of the small volume of gas which passes. It eliminates the noise and surging which occur when full volume of gas is admitted abruptly.



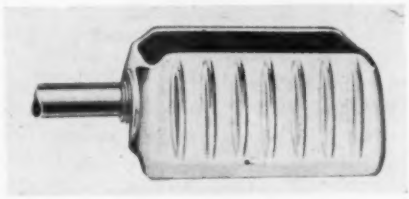
Detroit V-570

The motor assembly shown in diagram consists of a bi-metal strip motor, compensator and low voltage heater. The two former are fastened to opposite sides of the spacer. Other details of construction are indicated.

Sizes ½ to 1¼ inches. Full details in bulletin 201A issued by Detroit Lubricator Co., Gas Controls Division, Detroit 8, Mich.

Multiple Unit Burner

One of the outstanding advantages of the Little Gem Gas Burner shown here is its adaptability to almost any conditions where gas heat is required. Little Gem operates successfully in any small type of hot air, steam or hot water system, domestic or commercial.



"Little Gem" Burner.

One unit alone can be used where only a small amount of heat is required, or any number can be hooked up in a series to fit any type circulating heater, steam tables, enameling ovens, galvanizing tanks and many other applications. Used with manufactured, natural or L. P. Gas.

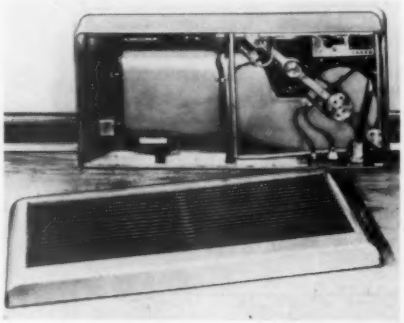
Made in one standard size and 3 burning capacities 30, 45 and 60 inch at 4 ounce pressure. Each unit is 6¾ inches long, 4 inches wide and 3 inches high and weighs 5½ pounds. Each unit is a complete burner. Capacity is controlled by the size of the orifices. Gives complete combustion without premixing.

Manufactured by The Columbia Burner Company, 729 Ewing St., Toledo, Ohio.

Midget Gas Furnace

A small gas heating unit with a capacity sufficient to heat 2½ rooms, and which is about the size of a suit case is made by Stewart-Warner Corporation, Heater Division, Indianapolis, Ind.

Developed from accepted airplane heaters, the unit was modified for house heating to burn any type of gas including natural, manufactured, mixed or L.P. Units are small enough so that they can be recessed in a wall between two rooms and distribute heat to each. They may also be placed in a closet, in an attic, between floor joists in the cellar or installed as a floor heater.



Complete Unit with grill removed. Cabinet dimensions 11 x 14 x 32 inches.

A motor blows air into and through the fire box or combustion chamber. This means that the heater will function without a chimney, and it is possible to put a simple fitting on the outside of the house and to carry the products of combustion away in this manner. Unit has thermostat control and electric ignition.

A heater may be put wherever it is wanted and either connected to a chimney, to discharge out the side of the house, or even through the roof with a separate small vent.

Full details of design and installation available from the manufacturers.

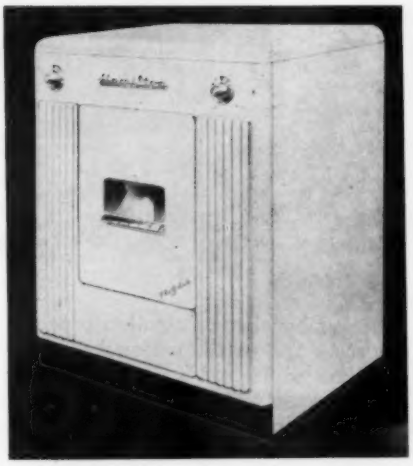
"South Wind" Heater recessed into Wall at baseboard.

Hamilton Clothes Dryer

This automatic clothes dryer operates on manufactured, natural, mixed and L.P. gas. Clothes are placed in a slowly revolving perforated drum. Heat is governed by thermostat, magnetic valve and safety pilot control.

Motor operates the drum at 50 R.P.M. and a fan to circulate air from intake, through the contents and to an exhaust duct. Interior of drum is illuminated.

May be located in laundry room or kitchen. Cabinet is of heavy gauge steel, white enamel finish. Overall dimensions, 39 in. high, 31 in. wide and 27½ in. deep.



Automatic Gas Clothes Dryer

Input 20,000 B.T.U. per hour. Gas supply line ½ in. I.D. Drying rate, 12 lb. wet load, damp dry for ironing 15-25 minutes; bone dry 30-35 minutes.

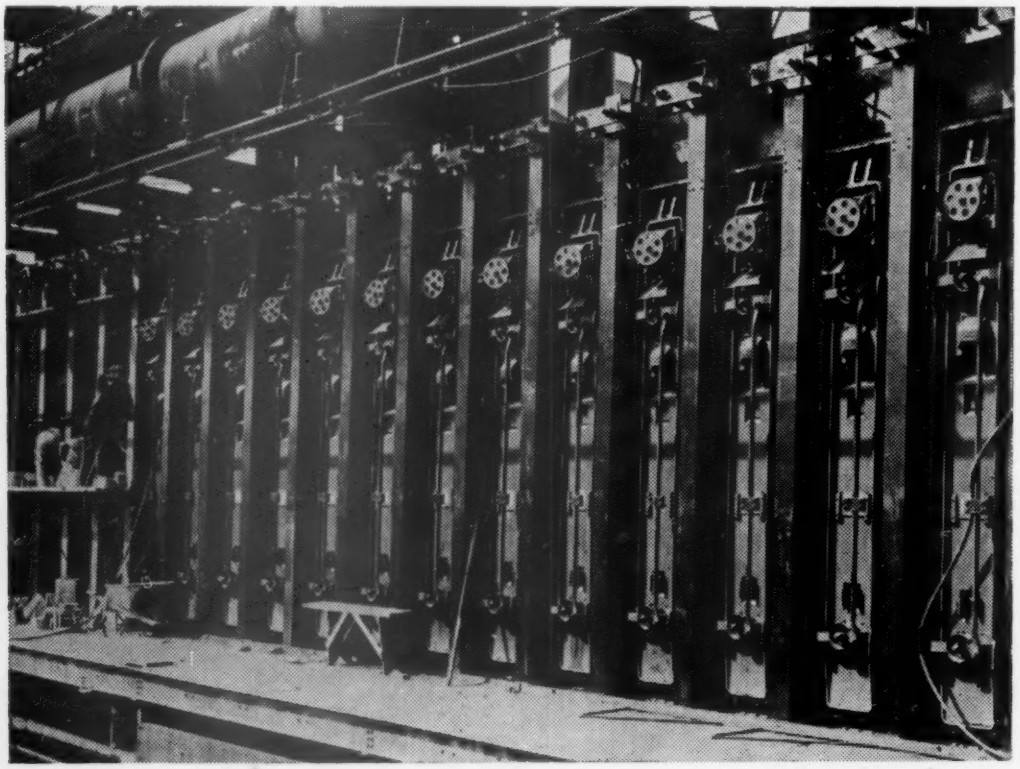
Full details from the manufacturers, Hamilton Manufacturing Co., Three Rivers, Wis.

Rehabilitation of Coke Ovens at Brooklyn Union

ALTHOUGH the winter of 1946-47 will be the most difficult and trying in the history of the company from the point of view of production of gas in relation to demand, The Brooklyn Union Gas Company is pushing a long range program of rehabilitation and expansion of gas making equipment which when completed will improve its operations and which will increase its productive capacity substantially.

The general program the company has undertaken includes specific projects for expansion such as new holders, additional water gas sets, a liquefied petroleum gas installation, and specific projects for repair and rehabilitation such as the overhauling of its coke ovens. The first half of this latter project, which is nearing completion, does not add to capacity, but increases the efficiency of the coke oven operation at the Greenpoint Works.

The repair of one of the two coke oven batteries is one of the most important activities of the company during 1946. It is the first major repair job on the ovens since their installation in October, 1928, and the modernization of this battery includes the addition of new steelwork, new self-sealing doors, modern machines for handling the doors, the rebuilding of the end flues in the battery and replacing the brick top of the battery with concrete. Work on the first battery of forty-five Becker type ovens began on July 15 and repair crews have been working since that time on a six-day schedule to meet a December 15 completion date.



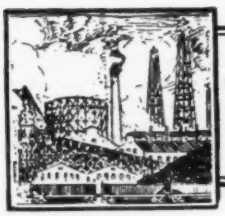
New type self-sealing doors and new buckstays are important features of the coke oven repair program at the Greenpoint Works of The Brooklyn Union Gas Company.

The rebuilding of the ovens required partial replacement of eroded brick floors and walls of the oven chamber, rebuilding the ends of the regenerator division walls and faces, installation of new steel buckstays, new door jambs, new self-sealing doors, two new coke guides of the racking type, two new door machines for extracting the doors on the coke side, new clay-lined steel standpipes, new steel charging hole castings and new door extractors for the pushing machines.

The modernization of the ovens will also improve working conditions and make unnecessary the arduous task of hand-sealing the doors with mud. The self-sealing device consists of a thin piece of steel mounted on the door. This piece fits into a recess on the door casting and is held tightly in place by springs, thus eliminating gas leakages.

As soon as repairs were completed on a group of ovens in the battery, the ovens were put back in service and brought up to full production gradually so that the entire battery could be up to full production by December 15. During the rehabilitation program the production of coke oven gas was reduced considerably. Normally the company produces twenty-three million cubic feet of gas daily with the two batteries of ninety ovens operating at one time. At one point during the repair period daily production of coke oven gas was down to about fourteen million cubic feet.

In this project 3,000 tons of refractory brick and 1,200 tons of steel have been used in the repair of the forty-five ovens. Similar repairs are to be made on the remaining battery during 1947.



News of the Gas Industry

New Officers, Pa. Natural Gas Men's Assn.

At the annual business meeting of the Association, held in the William Penn Hotel, Pittsburgh, on January 15, 1947, the following officers and directors of the Association for the year 1947 were elected:

President: E. M. Borger, The Peoples Natural Gas Co., Pittsburgh, Pa., Vice President: D. P. Hartson, Equitable Gas Co., Pittsburgh, Pa. Secretary-Treasurer: P. L. Kesel, 1015 Frick Bldg., Pittsburgh, Pa. Executive Secretary: Mark Shields, 2619 Grant Bldg., Pittsburgh, Pa. Counsel; B. H. Smyers, Jr., 435 Sixth Ave., Pittsburgh, Pa.

The following were appointed by President E. M. Borger as representatives of the Association on A.G.A. Managing Committees: Accounting Section: H. D. Borger, The Peoples Natural Gas Co. Industrial Section: P. W. Craig, Equitable Gas Co. Residential Section: Christy Payne, Jr., The Peoples Natural Gas Co. Technical Section: D. P. Hartson, Equitable Gas Co.

Eastern Natural Gas Regional Sales Conference

"What's cooking with natural gas" might well be the general title for the Eastern Natural Gas Regional Sales Conference to be held at the Roosevelt Hotel on February 13th and 14th under sponsorship of the Residential Gas Section of the American Gas Association.

More than 200 executives from natural gas, manufactured gas and mixed gas companies are expected to attend the two day session at which a group of authoritative speakers will discuss various phases of residential sales of natural gas ranging from heating water to market research and financing of appliance purchases.

F. B. Jones, Manager of Sales and Market Research, Equitable Gas Company, Pittsburgh, as chairman of the Eastern Natural Gas Council will welcome the confreres at the opening session. The keynote address will be delivered by R. H. Hargrove, President of the American Gas Association, and Vice-President and General Manager, United Gas Pipe Line Co., Shreveport, La. Mr. Hargrove will talk on the problems of the industry and the progressive steps the industry and its Association have taken to solve these problems.

Section Conference Plans Complete

The program for the three day A.G.A. Sales Conference on Industrial and Commercial Gas of the American Gas Association has been completed according to an announcement by Harry A. Sutton, Program Chairman. The Conference will be held in Boston on March 17, 18 and 19 at the Copley Plaza Hotel.

A somewhat different arrangement has been made of the program this year which it is felt will be of greater convenience to the attending gas men. The first day, March 17, will be given over to the commercial gas phases of our industry. March 18, the second day, will have subjects of interest to both commercial and industrial men, while Wednesday, March 19, will be devoted to subjects on industrial gas.

L. M. Klauber Becomes Pres. San Diego Gas & Electric Co.

At the Directors meeting of San Diego Gas & Electric Co. held in December L. M. Klauber was elected president, H. H. Cleland former president becoming Chairman of the Board.

L. M. Klauber

Vice president and general manager since 1941, Klauber's new assignment gives him top responsibility for directing the Company's expanding operations in growing San Diego County.

Klauber has devoted his entire business career to the Company. During the 35 years of his service, he has been successively, electric salesman, engineer in charge of the engineering department, superintendent of the electric department, assistant general superintendent, general superintendent, vice president in charge of operations, and vice president and general manager.

CONVENTION CALENDAR

February

13-14 *Residential Gas Section, Eastern Natural Gas Sales Conference,* Roosevelt Hotel, Pittsburgh.

March

17-18 *Residential Gas Section, Midwest Gas Sales Conference,* Edgewater Beach Hotel, Chicago.

17-19 *A.G.A. Sales Conference on Industrial & Commercial Gas* Copley Plaza Hotel, Boston.

20-21 *New England Gas Association,* Annual Meeting, Boston, Mass.

24 *G.A.M.A.* Hotel, Restaurant and Commercial Gas Equipment Division, Stevens Hotel, Chicago.

April

7-9 *A. G. A.-E. E. I. Accounting Conference,* Hotel Statler, Buffalo.
Mid-West Gas Association Annual Meeting, Hotel Paxton, Omaha.

14-16 *Distribution and Motor Vehicle Conference,* Hotel Cleveland.

14-16 *G. A. M. A. Annual Meeting,* Drake Hotel, Chicago.

16-18 *Southern Gas Association,* Biloxi, Miss.

25-26 *Gas Meters Association of Florida-Georgia,* Boca Raton, Florida.

30-May 2 *A. G. A. Natural Gas Department,* Spring Meeting, Stevens Hotel, Chicago.

May

15-17 *Indiana Gas Association,* French Lick Springs Hotel, French Lick.

20-22 *Pennsylvania Gas Association,* Wernersville, Pa.

June

2-4 *Joint Production and Chemical Committee Conference,* Hotel New Yorker, N. Y.

9-11 *Canadian Gas Association,* General Brock Hotel, Niagara Falls, Ontario.

23-24 *Residential Gas Section,* New York-New Jersey Sales Conference, Essex and Sussex Hotel, Spring Lake, N. J.

September

23-25 *Pacific Coast Gas Association,* Hotel Del Coronado, San Diego, Cal.

29-Oct. 3 *American Gas Association,* Annual Convention, San Francisco.

A.G.A. Southwest Personnel Conference Elects Senyard

W. H. Senyard, personnel director of the Louisiana Power and Light Company, New Orleans, La., was elected chairman of the American Gas Association Southwest Personnel Conference in a recent mail vote of that group. He succeeds H. D. Carmouche, superintendent of pipe lines, Houston Pipe Line Company. Other new officers are Willard G. Weigel, personnel director, Lone Star Gas Company, Dallas, vice-chairman, and R. S. Collings, relations director, United Gas Corporation, Houston, secretary.

W. H. Senyard

Organized in 1943 as an industrial relations forum for southwest gas utility executives with the objective of improving wartime operations, the conference has proved an outstanding success. Its meetings assisted materially in the clarification and practical application of the numerous governmental war manpower regulations. The continued importance of personnel matters has impelled the continuance of this organization as a means of keeping companies better informed on area developments.

Achievements of the conference include the successful establishment of satisfactory tested and going rates for pipe line transportation of natural gas and publication of a Manual on Natural Gas Distribution Job Classifications which has wide circulation in the gas industry.

Kinsman Appointed Rate Engr. Pacific Gas & Elec. Co.

George Kinsman, of Atherton, has been appointed rate engineer of the Pacific Gas and Electric Company at its San Francisco general office, according to announcement of James S. Moulton, P. G. and E.'s executive engineer. He succeeds Bergie B. Beckett, veteran rate engineer who has attained retirement age.

Mr. Kinsman came to P. G. and E. as assistant engineer in the Rate Department in October, 1945, after his release to inactive duty as a Lieutenant Commander in the U. S. Navy.

He has had extensive experience in the public utility field, although a newcomer to the Pacific Coast. He graduated from Armour Institute of Technology, Chicago, in 1924 and later, entered the employ of the Florida Power and Light Company in 1928 as an engineer in the rate department where he was successively assistant rate engineer, supervisor of commercial and industrial sales, southern division sales manager, commercial sales manager, and director of rates and economic studies.

French Heads A.G.A. Rate Committee

Appointment of Newell E. French, manager of the rate department of Equitable Gas Company and Duquesne Light Company, Pittsburgh, as chairman of the Rate Committee of the American Gas Association is announced by R. H. Hargrove, president of the Association.

Newell E. French

In this capacity, Mr. French heads a group of rate and valuation experts representative of the gas utility industry who are conducting a continuing study of rate structures and related matters. This committee has issued a number of valuable rate reports in past years.

New Gas Equipment Requirements

Recommended revisions to American Standard approval requirements for gas space heaters, domestic ranges, and portable baking and roasting ovens, as well as proposed new standards for combination ranges have been published and distributed to the gas industry by the Approval Requirements Committee.

The four texts have been issued for review and criticism. Following revision as result of comments received, under normal procedure they may be expected to become effective January 1, 1948.

Space heater revisions deal principally with modifications in keeping with present engineering practices, requirements no longer considered essential having been deleted for simplicity. Basic provisions for safe operation, substantial and durable construction, and acceptable performance are retained.

Range revisions are confined at this time to constructional changes dealing with venting. In addition they now make provision for models designed for attachment to a kitchen ventilation system.

Portable baking and roasting oven revisions consist mainly of proposed additions for high altitude operation and changes to bring current provisions up to date.

Proposed combination range requirements apply to models of the dual oven type in which the oven section may be heated by either or both gas or other fuel. They represent the first individual standards for this type of equipment.

J. E. Kern Joins Pacific Coast Gas Association Staff

President Edwards announces that John Edmond (Ed) Kern became a member of the staff on January 1, with the title of Assistant Manager. Due to the imminent retirement of Carl A. Swigart, the Association's popular Trade Relations Representative, the Manufacturers Section had been asked some weeks ago to suggest a successor. After a careful search, Henry Honer, Chairman of the Section, asked that Mr. Kern be appointed. This appointment has since been ratified by the Board of Directors.

Mr. Kern is a graduate mechanical engineer from Purdue University. Following graduation in 1922 he was connected with the Line Material Company for about a year, and for another year was engaged in residential construction in his home town of

J. Edmond Kern

Lafayette, Indiana. He visited California in 1924, liked what he saw, and got a job in the Rate and Appraisal Department of the Midway Gas Company. Upon the merger of the Midway Gas Company with Southern California Gas Company, Mr. Kern became a commercial and industrial salesman. He was later transferred to the domestic field and, as refrigeration engineer, played a large part in marketing the first Servel gas refrigerators in Southern California. He continued active in sales and at the time he left the Company in 1945 he was General Supervisor of Appliance and Dealer Sales for the Company's system. Mr. Kern has since been associated with Ralph Stowers of Pasadena in the wholesale and retail gas and electric appliance business.

Martin Appointed by G.A.M.A.

The appointment of Edward R. Martin as Chief Statistician of the Gas Appliance Manufacturers Association, 60 East 42nd Street, New York City, has been announced by Mr. H. Leigh Whitelaw, the Association's Managing Director. The appointment is in conformance with the Association's plans to expand and broaden its statistical program.

Edward R. Martin

Mr. Martin, until 1944 was Supervisor of Statistical Activities for the American Gas Association in New York. Following this he became affiliated with Servel, Incorporated, Evansville, Indiana, as Chief Marketing Statistician. His most recent affiliation was with E. Holley Poe and Associates, a natural gas consulting firm in New York.

Howard F. Weeks Succeeds Crone with Con. Edison Co.

Frederick W. Crone, director of the Editorial Department of Consolidated Edison Company of New York, Inc., retired on January 31, 1946, in accordance with the company's retirement age rule. Howard F. Weeks, who has been assistant director of the department, has been selected to succeed him, according to an announcement by Clarence L. Law, vice-president in charge of public relations.

Mr. Crone has been connected with the Consolidated Edison System since 1928, when he joined The New York Edison Company as assistant to the president. In 1933 he became director of the Editorial Department.

Mr. Weeks in 1926 became editor of the American Gas Association Monthly. He was assistant advertising manager of the Consolidated Gas Company in 1929 and was appointed assistant director of the Editorial Department of the Edison System Companies in 1933. He served as president of the Public Utilities Advertising Association in 1938.

Texas Legislator Seeks Tax On Transmission Lines

Representative C. S. McLellan of Eagle Lake, Texas, has stated that he will introduce a bill in the Texas legislature next March proposing the imposition of an occupation tax on gas transmission lines. He estimates that such a tax would yield an annual revenue to the state of between $30,000,000 and $50,000,000.

Industry Advice Sought by FPC

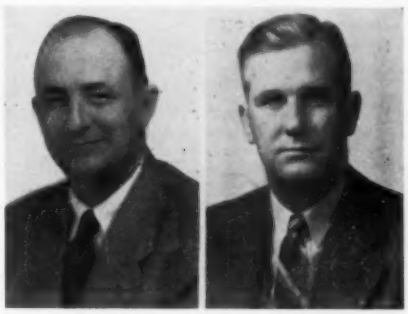
Federal Power Commission has announced that the agency had appointed a group of natural gas men as an Industry Advisory Committee to assist the Commission in allocating natural gas supplies becoming available as a result of utilization of the Big Inch pipelines.

This marks the first time that this federal agency has given evidence that it so highly values the advice of those who have to deal with the practical problems of the industry from day-to-day,, and is accepted by the industry as a gratifying indication that the Commission is desirous of working cooperatively with the industry in an effort to resolve the problems common to both the industry and the Commission.

Referring to the task involved in arriving at a decision on how and to whom the supplies of the Big and Little Inch gas shall be assigned, the Commission stated: "We recognize that solution of this problem calls for thorough knowledge of the operation of the systems involved and, therefore, the Commission is asking industry representatives to act on an advisory committee." The Commision added that the solution of the problems involved in getting this emergency gas into some of the systems which may need it will require the expert knowledge of the technical representatives of the industry.

Southern Union of Dallas Announces Promotions

C. H. Zachry, President of Southern Union Gas Company, Dallas, Texas, announces that effective January 6, 1947, Tom Corr, Pecos, Texas, has been transferred from Pecos to Santa Fe, New Mexico, as District Manager of the Company's entire Northwestern New Mexico District. He replaces O. B. Peacore who resigned recently.



Tom Corr Sloan Paxton

Mr. Corr, who has been in the employ of Southern Union fifteen and one-half years, has been District Manager of Southern Union's West Texas District for the past eight years.

Sloan Paxton, Pecos, Texas, succeeds Mr. Corr as District Manager of Southern Union's West Texas District. Mr. Paxton, a Southern Unionite for eleven and one-half years, has served as Assistant District Manager of these West Texas properties for four and one-half years.

City of Corinth, Miss. To Have Natural Gas

Receiving their supply from pipe line of Tennessee Gas & Transmission Co., the City of Corinth, Miss., will have natural gas service by 1948.

Meanwhile, Ben A. Ledbetter, City Engineer would be glad to have catalogs and other literature pertaining to equipment for the local distribution system and on industrial and domestic equipment using natural gas.

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Michigan Consolidated Gas Company Announces Promotions and Appointments

The Production and Pipe Line District, which is now under the overall charge of Glenn R. Chamberlain, First Vice President, has made a number of important changes in the executive and supervisory staff as of the first of the year.

James E. Spindle, with offices at Grand Rapids, becomes General Manager of the Production and Pipe Line District, with charge of all natural gas production, gas fields and transmission operations and construction in the Western Districts.

Harry J. Gabel, who still retains the position of Manager of the Big Rapids District, becomes General Superintendent of the Production and Pipe Line District. His office will remain in Big Rapids.

J. B. Thomson, who has been heretofore with the Muskegon District of the Company, has been made Engineer Production and Pipe Line District and for the Big Rapids District, with his office in Big Rapids.

Ronald O. Ankarberg has been made Field Superintendent. Henry Hall has been made General Foreman of Maintenance. Wesley Morrison has been made General Foreman of Compressors with their addresses, as before, in Big Rapids.

John L. Robinson, Muskegon, who was formerly General Manager of the West Michigan Consumers Company, which company has been acquired and merged with our Company, becomes Manager—Casinghead Gas Production and Operating Superintendent of Muskegon Storage Field and Transmission Line, Reed City to Muskegon. William Pike becomes Assistant Manager—Casinghead Gas Production and Assisting Operating Superintendent of Muskegon Storage Field and Transmission Line, Reed City to Muskegon. His office will be in the Reed City Plant.

John A. Vary, who has been an engineer in the Grand Rapids District, now becomes Chief Engineer—Production and Storage Engineering Division, and Charles E. Wilcox, formerly also an engineer in the Grand Rapids District, becomes Staff Engineer—Production and Storage Engineering Division. Their offices will remain in Grand Rapids. This

Harry J. Gabel James E. Spindle

engineering division will be under the direction of Mr. James E. Spindle and advisory to the Company, particularly in general gas storage field matters.

In the Grand Rapids District Wallace M. Chamberlain becomes General Manager of the Grand Rapids District and General Sales Manager of the Western Districts. Albert G. Schroeder, First Assistant Secretary, is Assistant General Manager. Albert F. Mullins, Assistant Treasurer of the Company, is also made General Accounting Officer of the Western Districts. These three officers will continue with Grand Rapids as their headquarters.

Mr. Walter H. Kurdelski has been promoted to Residential Sales Manager of the Grand Rapids District, and Leonard H. Verschoor becomes Industrial Sales Manager of that District.

All of these men have heretofore held important key positions in the Grand Rapids District.

In the Muskegon District Harry S. Parker becomes Assistant General Manager as announced by Dean W. Flowers, General Manager.

Mr. Flowers also announced the promotion of Dan A. Nielson to General Superintendent and Joseph H. Buck to Assistant Superintendent. The Assistant General Manager position is newly created in the district.

Mr. Parker has been General Superintendent here for several years. He has been employed in various positions in the Muskegon gas property since January 24, 1921. Prior to then he was employed in the distribution department of the Detroit City Gas Company, which now is a part of the Michigan Consolidated Gas Company.

Columbia System Makes Changes in Personnel

The advancement of Earl D. Clutter to the position of general superintendent of the Pittsburgh Group heads the list of personnel changes announced on January 1, by Irving K. Peck, vice president and and general manager of the Columbia System affiliated natural gas companies having headquarters in Pittsburgh.

Mr. Clutter received his early natural gas production and transmission training in the Majorsville, W. Va. gas fields. After serving in various capacities for The Manufacturers Light and Heat Co., when the Pittsburgh Group was formed, he became superintendent of pipe lines. Mr. Clutter will have general supervision of the production, transmission, distribution, gas engineering, civil engineering and transportation departments.

Other appointments include Gerald E. Wilson as superintendent of distribution of the Pittsburgh Group.

A. B. Lauderbaugh as chief gas engineer of the Pittsburgh Group. He will have general supervision of a newly formed gas engineering department.

Ray A. Newbold, for two years local manager at Uniontown, Pa. for The Manufacturers Light and Heat Co. to the position of District Manager. From headquarters in Uniontown, Mr. Newbold will supervise distribution operations in the area of Brownsville, Somerset, Donora, Irwin and Jeannette, Pa.

David W. Brown, assistant district manager for The Manufacturers Light and Heat Co. in Beaver Falls, Pa. since 1944, is now district manager in Bellevue, Pa.

Thomas J. Foley has been named local manager of the Beaver Falls, Rochester and New Brighton offices of the natural gas company. Henry F. Cummings, local manager at New Martinsville, W. Va. is now at Sewickley, Pa., as local manager.

In the transmission operations of the company, R. E. Grant has become field superintendent of Division 4. He has headquarters at the Hundred, W. Va., field office.

Willis H. Hann becoming field superintendent of the company's Division No. 6. Mr. Hann now has charge of all transmission lines of The Manufacturers Light and Heat Co. from Fayette County to a point in Delaware County, Pa.

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Heath Tree Service Personnel

Milton W. Heath, President and General Manager of Heath Tree Service Inc., Wellesley, Massachusetts, announces two important additions to his organization. Mr. Heath's record in leak survey work is well known throughout the country and this "threesome" will be a great step forward.

Leon J. Willien, well known in the Gas industry for his consulting work and writings in the Gas engineering field, has been appointed special representative for the West Coast with offices in the Electric Building, San Diego, California.

Richard W. Stafford, a well known engineer in the Mid-West area, has been appointed special representative for the Mid-West with offices in Chicago, Illinois.

These two men will give the Heath Vegetation Surveys a top notch organization and bring this well known service closer to two of the most important seetions of the country.

Mr. Heath organized the business in the early thirties, originating the vegetation surveys after seeing the need for such service following a very severe winter in New England which caused many gas leaks. Now in the 14th year, surveys will be made for several hundred companies in some 30 States and several provinces in Canada.

Mr. Willien has contributed many papers and articles of engineering value to the gas industry, has served as chairman of many A. G. A. Committees, received the Charles A. Munroe award in 1936 and today is recognized as one of the outstanding engineers of the gas industry.

Mr. Stafford was formerly chief engineer of Connelly Iron Sponge and Governor Co., and later formed the R. W. Stafford Co., in Chicago representing Natural Gas Odorizing Co., and the Heath Tree Service, Inc.

Earle H. Clark, Membership Secretary

Earle H. Clark, Breckenridge, Texas has been appointed membership secretary of the Texas-Mid-Continent Oil and Gas Association, Dallas, Texas.

Mr. Clark, former special agent for the Federal Bureau of Investigation, succeeds the late W. H. Pullman as head of the Texas Mid-Continent's membership activities.

Leon J. Willien R. W. Stafford Milton W. Heath

Minneapolis Capitalizes Temporary Gas Shortage in Cartoons

An unusual cartoon-style public relations campaign based on the theme "Such Popularity Can Be Embarrassing" is appearing locally in 420-line newspaper ads for the Minneapolis Gas Light Co.

Designed as an informal explanation of gas equipment shortages, and temporary inability of the Minneapolis firm to fully supply local needs for gas refrigerators, furnaces, water heaters and other pieces of household gas equipment, the series emphasizes the "embarrassing popularity" created by public demands.

Cartoons depict the embarrassed small fry with the one ice cream cone in the crowd; the stymied belle meeting two suitors at the door; plight of the crooner mobbed by admirers at the stage door, uncomfortable spot the enthusiastic male (accompanied by wife) finds himself in as observer of a midway hula, and other "embarrass" situations.

Copy tone in informal "don't shoot the piano player, he's doing the best he can" style makes capital of not being able to fill immediate demands, but promises to supply needs as quickly as humanly possible.

New Locations of Offices

The Lincoln Electric Company, Cleveland, Ohio, announces new locations of its branch offices in San Francisco, Los Angeles and Birmingham.

The new location of the San Francisco office and warehouse is at 1302 Stanford Avenue, Emeryville 8, California, under the direction of Mr. L. P. Henderson, district manager and welding engineer.

The Los Angeles office and warehouse is now located at 1500 Calzona Street, P. O. Box 7336, Station L, Los Angeles 23, California. Mr. J. B. McCormick is district manager and welding engineer.

The Birmingham district office has its new location at 113 North Ninth Street, Birmingham, with Mr. J. E. Durstine the district manager and welding engineer.

A. O. Smith Water Heater Div. Now Located at Kankakee

The Water Heater Division of the A. O. Smith Corp., has been moved from Milwaukee, Wis., to the company's new $3,500,000 water heater plant at Kankakee, Illinois, as announced by James F. Donnelly, who is in charge of the sales division. The move includes his two assistants, Paul H. Cramp and Don D. Williams, the latter in charge of Smithway-Burkay Water Heaters for commercial establishments.

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Laboratories Honor George E. Whitwell

Honoring George E. Whitwell, retiring Chairman of the Laboratories Managing Committee, staff members of the American Gas Association Testing Laboratories recently presented him with a wrist watch. The presentation was in appreciation for 18 years of service on the committee, the past five of which he was chairman.

In making the award, R. M. Conner, Director called attention to the fact that Mr. Whitwell served as chairman through the most critical period of the Laboratories history, his tenure having encompassed the conversion of the Laboratories to war work and back to peacetime operations again in addition to their restoration after extensive damage by fire some years ago.

Mr. Whitwell, pointing out the service that the Laboratories have given the gas industry in establishing standards for gas equipment and testing appliances, complimented the staff upon its achievements.

"The Laboratories have stood as a sort of a symbol to me of the kind of thing that has demonstrated the greatness of American democratic principles," he said. "While a good many of the latter have suffered from attacks of one kind and another during the more or less recent past, it has always been a source of gratification to me that the Laboratories have stood fast without appreciable change as a successful example of the self-regulation of a large industry.

"It is no wonder, therefore, that I have been keenly interested in them and whatever this interest may have cost me in the way of time and work has been more than fully repaid through the excellence of the results which have been obtained. The watch comes as a sort of extra dividend which will remain with me in the forepart of my memory for the rest of my life."

Mr. Whitwell, who is Vice President in Charge of Sales of the Philadelphia Electric Company, remains as a member of the Laboratories Managing Committee. After retaining the chairmanship throughout the war in spite of pressure of other duties, he was recently succeeded by Arthur F. Bridge, Vice President and General Manager of the Southern Counties Gas Company of California and a member of the committee for nearly 17 years. The committee was recently enlarged with the appointment of George F. Mitchell, President of The Peoples Gas Light & Coke Company of Chicago, and Elmer F. Schmidt, Vice President and Operating Manager, Lone Star Gas Company of Dallas.

Infra-Red Gas Analyzer

A highly sensitive infra-red gas analyzer designed at Johns Hopkins University during the war can detect one part of carbon monoxide or carbon dioxide in 50,000 parts of air, according to a report now on sale by the Office of Technical Services, Department of Commerce. Though manufactured for military use, the analyzer will find valuable peacetime applications in the chemical, petroleum, and allied industries, the report states.

The instrument can make a continuous, automatic analysis of any gas or mixture of gases capable of absorbing infra-red rays. It can also detect the presence of a specific gas in a mixture and measure its concentration. When properly adjusted, it can give a reading within three seconds after receiving a sample of gas.

The report contains a broad review of various infra-red methods for detecting gases as well as a detailed description of the design and construction of the infra-red gas analyzer.

Orders for the report (*Selective Infra-red Gas Analyzers;* PB-40546; photostat, $4; microfilm, $2; 50 pages, including drawings, graphs, and photographs) should be addressed to the Office of Technical Services, Department of Commerce, Washington 25, D. C., and should be accompanied by check or money order, payable to the Treasurer of the United States.

Personnel Changes Mark Ohio Foundry's 101st Year In Appliance Building

Established in 1846, the Ohio Foundry & Manufacturing Company of Steubenville, Ohio now embarks on its second hundred years in the manufacture of heating appliances. The firm, specializing in a full line of manual and automatic space heaters for all types of gas, announces several changes in personnel effecting its technical and production staff.

Charles J. Grayson, plant manager and director, has resigned from active duty because of ill health. A pioneer designing engineer in the gas appliance industry for the past quarter century, Mr. Grayson will continue to serve the company in a consulting capacity.

Alex B. Sharpe, grandson of the company's founder, has been advanced to the post of plant manager, effective immediately.

Added to the firm's technical staff is Harry E. Thompson of Louisville, Ky., well known in appliance engineering circles for the past number of years with A. G. A. Laboratories. Mr. Thompson now becomes Chief Engineer. The company is headed by George H. McFadden, president and general manager who is also a descendant of the original founder.

On behalf of staff members of the A.G.A. Testing Laboratories, R. M. Conner, Director, presents engraved wrist watch to George E. Whitwell, right, member of Managing Committee for 18 years and chairman 1941 to 1946.

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Automatic Water-Gas Controls
Hydraulically-Operated Valves
for Air, Gas, and Steam
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"A" TYPE METERS
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DIAPHRAGMS
Cleveland Gas Meter Co.
ESTABLISHED 1875
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

Paul H. Dow Named Bryant Sales Promotion Head

Paul H. Dow

The appointment of Paul H. Dow as sales promotion manager of Bryant Heater Company, Cleveland, is announced by James N. Crawford, vice president in charge of sales.

Dow will work with the expanded Bryant distribution organization in merchandising the company's line of gas-fired heating equipment.

Dow comes to Cleveland from Dayton, where he has been associated with the Airtemp division of Chrysler Corporation, in charge of public relations and dealer relationships. Dow had previously been with the General Electric Company.

Portland, Oregon Curtails Certain Gas Services

Effective as of Jan. 23rd the Portland Gas & Coke Co., Portland, Ore., announced that restrictions were invoked on the connection of any new heating and certain volume industrial business beyond that for which applications are on file.

In making the announcement, C. H. Gueffroy, vice-president, reported that the number of heating customers served by the company has more than doubled since 1940 even though wartime restrictions were in effect during most of that period. He also said that each heating customer has an average demand equal to that of 23 domestic users.

"The result," he said, "is that the daily peak demand on our system already has topped 57 million cubic feet on a moderately cold day this winter and will reach 65 million if we get a mean temperature of 15 degrees. When contrasted with a minimum summer demand of about 12 million cubic feet a day, the size of the seasonal load imposed by heating is readily apparent."

Availability of gas for cooking, water heating, refrigeration is in no way affected by the new limitation.

Roberts & Mander Corporation Appoints W. Y. Hill

Roberts & Mander Corporation, Hatboro, Pa., have announced the appointment of William Y. "Bill" Hill as district sales representative for New York state. Mr. Hill's territory will include all of New York state except Westchester County, Long Island, and the Metropolitan New York area.

William Y. Hill

Mr. Hill will serve customers in the territory formerly covered by Mr. Walter May. Mr. May has resigned to open his own appliance business in Kingston, N. Y.

GAS PLANT EQUIPMENT

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UGI NATURAL GAS REFORMING PROCESS
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GAS DISTRIBUTION
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High Pressure RANGE:	Low Pressure RANGE:
Cu. Ft. of Gas Per Hour—100-10,000 M	Cu. Ft. of Gas Per Hour—10 to 500 M
Diameter of Pipe—Inches ¾-30	Pipe Diameter—¾" to 48" (including standard and actual weight up to 4")
Difference in Absolute Pressure—Lbs. per sq. in., 1-500	Pressure Loss—Inches .01-10
Sum of Absolute Pressures—Lbs. per sq. in., 2000-20	Length of Pipe—Feet 30-30,000
Specific Gravity—1.5-.35	Specific Gravity—1.5-.35
Length of Pipe—Feet 100-5000	Constants—1400-1000
Length of Pipe—Miles 1-250	

Made of durable celluloid, encased in a convenient leatherette cover with complete instructions. Actual size 6¼ x 7½

$4.00 Each Postpaid

American Gas Journal
53 Park Place, New York 17

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RUST PREVENTER
For Steel Hot Water Storage Tanks

Rust NO LONGER A Must!

"ELNO" eliminates the need for expensive non-ferrous or specially-processed tanks even where water is so highly-corrosive that such tanks have always been considered essential. It is not like some chemical "rust inhibitors" which merely bleach discolored water and do little or nothing to prevent rust or protect the tank. "ELNO" really routs rust, requires no attention, and causes no further expense after installation.

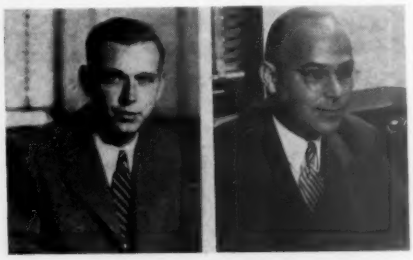
Get set now to tap an important new source of profit by offering your customers maximum security against rust and corrosion in the equipment you sell and service. The field is broad because "ELNO" is available in types and sizes for all makes of heaters and boilers. Write for technical, catalog, price and promotional information today.

PATENT APPLIED FOR
The Cleveland Heater Co.
2310 Superior Ave. Cleveland 14, Ohio

CLEAN, RUST-FREE HOT WATER AT LOWEST EQUIPMENT COST

Fluor and Seavey are Appointed Directors

T. H. "Ted" Seavey, manager of purchases, and J. R. "Bob" Fluor, manager of manufacturing, have been appointed directors of The Fluor Corporation, Ltd. Seavey has been with the firm since 1931, and Fluor, who was an Army Air Force pilot during the war, rejoined the company last June.



J. R. Fluor T. H. Seavey

James P. Wiseman, general sales manager has been appointed to the board of directors effective January 1, 1947. Mr. Wiseman, who has been with the company four years, was placed in charge of the sales division last September.

Robertshaw Thermostat Co. Simplifies Corporate Structure

John A. Robertshaw, President of the Robertshaw Thermostat Company, Pennsylvania, today announced that as of January 1, 1947, the Robertshaw Company's subsidiaries with separate corporate structures — the American Thermometer Company of St. Louis, Mo., the Grayson Heat Control Co., Ltd., of Lynwood, California, and the Paragon Manufacturing Company of Scottsdale, Penna., have merged with the parent company. Hereafter American Thermometer Company will be known as American Thermometer Division, Robertshaw Thermostat Company; Grayson Heat Control, Ltd., as Grayson Controls Division, Robertshaw Thermostat Company. The Paragon Manufacturing Company has been completely absorbed.

Mr. Robertshaw stated that the company's new simplified corporate structure permits a complete interchange of Processes, Engineering, Models and Ideas. "Robertshaw will now be able to produce," Mr. Robertshaw continued, "certain high production models in geographically separated sites, thereby increasing output and giving improved service to our customers."

Ruud Mfg. Co. Appoints Leech Mgr. of Cincinnati Branch

Harry S. Leech, member of the headquarters sales staff of the Ruud Manufacturing Company, Pittsburgh, Pa., has been named zone manager of the new Ruud branch office in Cincinnati, O., it is announced by Frank A. McFerran, Ruud general sales manager. The zone includes southern Ohio and central and eastern Kentucky.

Mr. Leech but recently returned from service with the Army's occupational forces in Tokyo, Japan. For ten years previous to the war, he was associated with the Ruud company at their executive offices in Pittsburgh in both the sales and engineering departments.

Connelly Incorporates Under New Title

The Connelly Iron Sponge & Governor Co., Chicago, has announced a change in the firm's name to Connelly, Inc., effective January 1, 1947, while the manufacturing rights to back pressure valves, governors and manometers have been acquired by the Norwalk Valve Co., South Norwalk, Conn.

These products will continue to carry the Connelly name but will be marketed by the manufacturer. Connelly, Inc. will carry on the production of Iron Sponge, a gas purification material, Caloroptics, H_2S testers and Ph kits.

According to Arthur L. Smyly, president, who is celebrating his fortieth year with the company, Connelly plans no change in management or policy.

Wendell C. Davis Elected Vice-President Cribben & Sexton Co.

Mr. George D. Wilkinson, Chairman of the Board of Directors, has announced the election of Mr. Wendell C. Davis as Vice President of Cribben & Sexton Company, Manufacturers of Universal Gas Ranges.

Mr. Davis joined the Company as Controller in 1942. He was elected Treasurer in January, 1943, and became a member of the Board of Directors in 1946.

During his association with Cribben & Sexton, Mr. Davis has guided all fiscal and financial matters for the Company. In addition to these duties, he was assigned the complete responsibility for administration of all war contracts, including negotiations, terminations, and re-negotiations with the War Contract Price Adjustment Board.

Mr. Davis will continue his present duties as Treasurer and Controller of the Company.

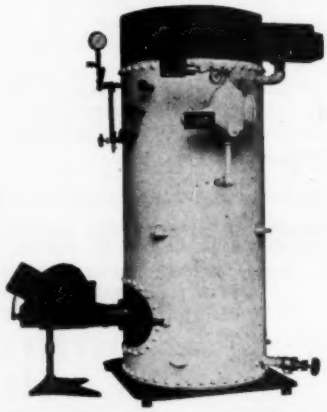
J. G. Coutant Joins Barium Steel Corporation

Jay Gould Coutant, Fuel Engineer, has become associated with the Barium Steel Corporation, 25 Broad Street, New York 5 and will supervise the fuel and refractory activities of the Barium subsidiaries in the steel and allied industries.

Mr. Coutant specialized in Thermodynamics at Union College, Schenectady, New York, and was associated with the General Electric Company and the American Locomotive Company. He has also done active work with the Lima Locomotive Works, Willys Overland Corp., the Societe Amme. Foyers Automatique at Paris, France; the Underfeed Stoker Corp. of London; the Maison Brequet of Paris, France, and the Carter Coal Company.

He is the author of several studies of steam and heat generation and conservation, as well as pressure combustion.

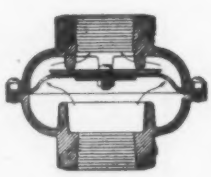
LATTNER
GAS — OIL BOILER
3 HP to 35 HP.



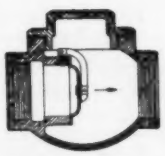
Burns natural gas or regular furnace oils with equal efficiency using same burner.

P. M. Lattner Mfg. Company
Cedar Rapids. Iowa

Pressure Controls for Gas and Air



HORIZONTAL
DIAPHRAGM CHECK VALVES DISC
VERTICAL



NORWALK VALVE COMPANY
Manufacturers of Connelly Governors, Valves and Gauges
33 Railroad Ave. South Norwalk, Conn.

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Attention Gas Companies Why Send Out Your Meters for Repairs

Would you like to start your own meter repair department? Shop Repair Foreman, 20 years experience, top-notch man, thoroughly familiar with all phases of meter repair will supervise installation of meter repair equipment and train your personnel to do repairs in your own shops. If you prefer I will repair meters on contract on your premises. Address Box 160, c/o AMERICAN GAS JOURNAL, 53 Park Place, New York City 7.

Gas Superintendent Wanted

For Latin-American gas public utility. Must be experienced in manufacture of gas, using Jones oil gas process or equivalent. Requires experience in distribution; also customer relations. Salary open. Write full details, education, experience. Box 163. c/o American Gas Journal, 53 Park Place, New York City 7, N. Y.

GAS ENGINEER WANTED

Age about 30, to act as assistant general manager for manufacturer of pressure controls and national service organization. Starting salary $400.00 per month. Address Box 164. c/o AMERICAN GAS JOURNAL Inc., 54 Park Place, New York City 7, N. Y.

Rockwell Manufacturing Co. Files Suit Against Union for Fifteen Million

In what is believed the first action of its type, the Rockwell Manufacturing Company, Pittsburgh, Pa., one of many defendants in suits for portal-to-portal pay, filed a counter-action Jan. 3rd, asking $15,000,000 for production it said was lost in slowdowns by workers.

"The company named as defendants four American Federation of Labor union officials and the employees they claim to represent, who, according to the company, comprise 1,100 of the 1,700 employes at its Homewood plant in Pittsburgh.

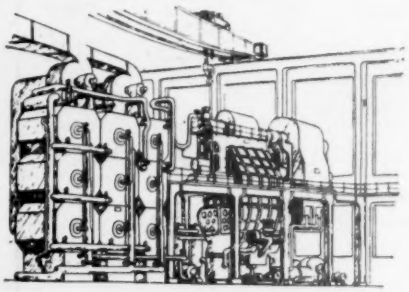
Col. W. F. Rockwell, President, made the following statement in connection with the action.

"We have filed in the United States District Court an answer to the demand for 'portal to portal pay.' We have included in it our claim for losses sustained as a result of the breach of our employment contracts. We regret that this action is necessary as our relationship with the employees had progressed to a point where harmony in the future seemed assured. As a matter of fact it has been the boast of the employees that their contract with Rockwell Manufacturing Company was the best labor contract in the Pittsburgh industrial area. Suddenly and without warning certain executives of the A. F. of L. International Organization, claiming to represent the employees, instituted an action containing fantastic demands against the Pittsburgh Equitable Meter Division of Rockwell Manufacturing Company. The issue basically is what constitutes a work week. We have always treated our employees and the duties they perform in good faith and with an open mind and have carefully seen to it that each employee was fully compensated. If, after all these years, it is necessary to redetermine what constitutes a forty hour work week, then the Court should have before it all the facts. It has been recognized for some time that some of our employees, in spite of a written contract, have not worked an eight hour day or a forty hour week but have expected compensation for eight hours in each day and forty hours in each week. Now that the issue has been put squarely before us it is our intention to show the extent of loss to the Company arising out of slowdowns and the admitted refusal to maintain production. This is regrettable but as chief executive officer of the Company, I must be as fully aware of the rights of stockholders as I am of the rights of employees. Each group must be and will be protected, but neither group will be made to suffer for the benefit of the other. All that should be expected by either is a fair day's work for a fair day's pay."

Gas in France

(Continued from page 13)

ter coal dust over the neighborhood. The householder will light his heating boiler in the fall, and, regulating it with a thermostat, he should not have occasion to be aware of its existence till he shuts it off the following spring." He also said: "Boilers of the future will consist of unit cells of the tube and header type."



The Boiler Room of the Future, as predicted in 1931 by George A. Orrok

It is of importance to know his views have been confirmed, that some boiler rooms have disappeared and that cellular gas fired high pressure steam boilers are being used that not only eliminate header construction, but obviate the necessity of foundations, chimneys, and many other costly items previously entering into fuel consumption, and operating expense.

Underground Gasification

France through thrift and conservation may be expected in a few years to balance her National economy. Like America, coal seams of thick dimensions are becoming exhausted, and miners to work the thin coal seams are fewer each year. It is therefore of increasing interest that the Belgian experiment of underground coal gasification is being watched. The experiments may be expected to include underground hydrogenation with additional oxygen supply. The process will make abandoned mines a source for supplying low cost gas to pipelines.

Refractories

France is now a buyer of lightweight firebrick for the relining of all types of domestic and industrial furnaces.* In some cases reductions of gas consumption up to 80 or 90% of the gas normally burnt in a firebrick furnace have been achieved.

The low heat-storage capacity of light-weight insulating refractories and the tremendous savings in fuel consumption together with a large output from the furnaces has been responsible for a reanalysis of the steam generation problem.

French private interests have been investigating the manufacture of light-weight insulating refractories for lining of all types of gas fired furnaces and also the construction of light-weight steam generators to be used for producing steam economically with gas fuel.

*See AMERICAN GAS JOURNAL, *April, 1946.—Ed.*

Training Employees

(Continued from page 18)

sane, sound, healthy lines and then to go out and make that dream come true in the day-by-day operations, day after day, year after year, until perhaps twenty-five years from now someone may say to you as they might have said to the Bishop of Seville:

"You started out with a conviction."

Let *us* build here a cathedral in the area of human relations so magnificent that generations following after us will think us mad for ever having dared to dream of such a thing.

REFERENCES

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J. Davis Houser—What People Want from Business; McGraw-Hill Publishing Company.
F. J. Roethlisberger and W. J. Dickson—Management and the Worker; Harvard University Press, Cambridge.
American Management Association—Annual Report for 1946, "Management Appraises Its Job"; American Management Association, 330 West 42nd Street, New York 18, N. Y.
Lee H. Hill and Charles R. Hook, Jr.—Management at the Bargaining Table; McGraw-Hill Publishing Company.

Presented at the Accounting Division Meeting, New England Gas Assn., Boston, November 20, 1946.

HARVEY E. GOLDEN

Harvey E. Golden, Vice President in Charge of Sales of the Florence Stove Company, died January 17 at Smyrna Beach, Florida.

One of the most widely known executives in the industry, Mr. Golden was associated with Florence for twenty years, joining the company as Midwest Sales Division Manager in 1926. He was New York Division Sales Manager for some years prior to becoming General Sales Manager in 1941, at the Florence home office in Gardiner, Mass. He had been elected a vice president in December of last year.

Mr. Golden directed the rapidly growing Florence organization. On December 30 he went to Florida for a winter vacation and while there, suffered a heart attack which he failed to survive.

Water Heating

(Continued from page 34)

the installation instructions supplied by the heater manufacturer.

(2) Good practice, of course, demands that the steam supply line be connected to the *upper* and the condensate line to the *lower* connections in the flanged head of the heater to which the heating coils or tubing are attached.

(3) Good practice likewise demands that the water supply line and the hot water discharge line be connected to tappings at *opposite* ends of the heater shell in order that the water flowing through the jacket or shell may contact the maximum, possible heat transfer area of the immersed heating coil.

(4) Provision for connecting the condensate discharge line from the steam trap to the condensate return line to the boiler should be made. Discharge of condensate to a drain is not only wasteful but *seriously disturbs* the effectiveness of boiler water conditioning or treatment as the almost unpredictable volume of steam which will be used without return of condensate to the boiler will result in an equally unpredictable fluctuation in the volume of raw, makeup water which will be required and make it difficult, if not *impossible*, to correctly anticipate the quantity of conditioning chemicals which will be required.

(5) If a thermostatically actuated, automatic steam valve is unavailable or will not be employed to control the rate of steam supply to the booster heater, a less accurate but fundamentally automatic control of steam supply and, consequently, of hot water discharge temperature can be accomplished by means of *plug type* cocks installed in both the steam supply to and hot water discharge line from the heater as described in detail under "Control of Water Temperature" in Part I of Chapter IV.

Correct and incorrect practice with respect to the installation of Recovery Water Heating Systems will be covered in Part 2 of Chapter VIII to follow.

Air Filters. A booklet of some 40 pages issued by Drico Industrial Corporation, 29 Broadway, New York 6, includes description matter relative to the Vokes principles of filtration.

Applications to air conditioning, filtration of liquids and gases and mechanical separation are outlined. Specific uses on air compressors, Diesel engines and protection of mechanical equipment are discussed. Copy of the booklet on request.